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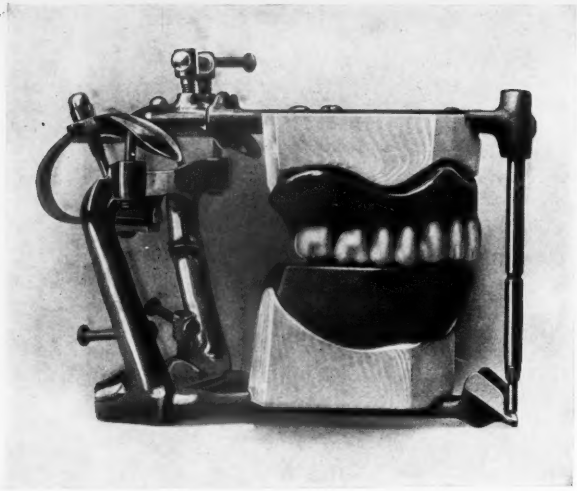

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THE DENTAL DIGEST

GEORGE WOOD CLAPP, D.D.S., Editor

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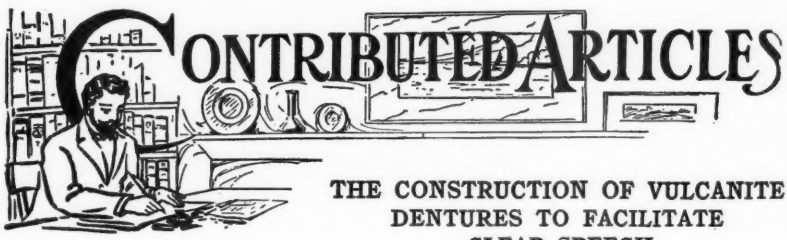


THE CONSTRUCTION OF VULCANITE DENTURES TO FACILITATE CLEAR SPEECH

By I. J. DRESCH, GRAND RAPIDS, MICH.

This article was awarded the second prize in the Prosthetic Articles Contest

In its relation to artificial dentures, the essential requirements in the production of articulate speech, are, first, an extremely thin palatal covering or base; second, the normal reproduction of the alveolar ridge and palate; third, the spacing and length of the anterior teeth.

Let us examine these three requirements in order named: Figures 1, 2, and 3 illustrate the delicate relations existing between the tongue and palate, and should convince the most skeptical, of the necessity of a very thin and uniform base plate. Figures 4, 5, and 6 show the tongue shut against the anterior alveolar ridge, and blocking the flow of vibrating air (or voice). This relationship is essential to the production of all nasal sounds, or words. The dotted line in figure 4 shows the escape of air through the nasal passages, being permitted by the depression of the soft palate. Figures 7 and 8 show the necessity of having the anterior teeth spaced, and of the proper length. Figure 7 shows the air (or voice) escaping through the interstices of the teeth, and without those spaces, such

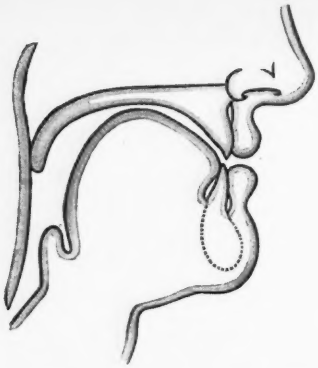


Fig. 1. Small centre aperture between the point of the tongue, and the alveolar ridge, centre aperture between the front of the tongue and the hard palate, and soft palate shut against the back of the pharynx. The passageway is quite small, all along the point and front of the tongue, but the smallest part of the passage way is at or near the point of the tongue. Sound: SS as in hiss; S as in his

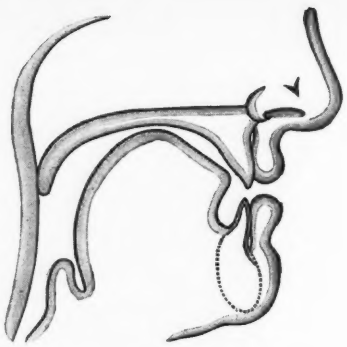


Fig. 2. Small centre aperture between the front of the tongue, and the centre of the hard palate, centre aperture between the point of the tongue and the alveolar ridge, and soft palate shut against back of the pharynx. The passageway is quite small all along the front and point of the tongue, but the smallest part of the passageway seems to be at or near the front of the tongue, at least further back than the point. Sound: Sh as in mesh; S as in measure

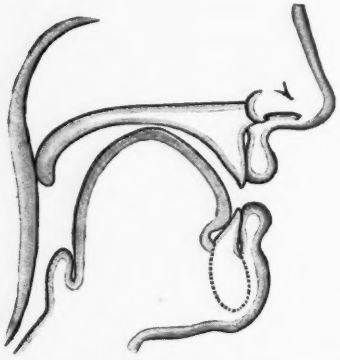


Fig. 3. Small centre aperture between the front (or top) of the tongue, and centre of the hard palate. Soft palate shut against back of pharynx. Sound: Y as in you; H as in hue

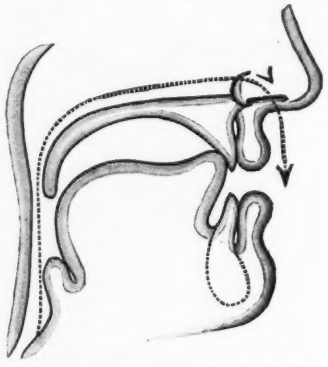


Fig. 4. Point of tongue shut against alveolar ridge and centre aperture between soft palate and back of pharynx. The depression of the soft palate permits of the escape of air (or voice) through the nasal passages, as shown by the dotted line. Sound: N as in sun

words as love, dove, scuff, etc., are well nigh impossible. Figure 8 is a convincing argument for perfect length in teeth. If the teeth are too long, the patient will invariably whistle, and if too short will tend to lisp.

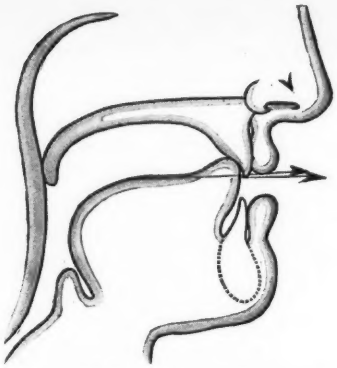


Fig. 5. Point of tongue placed against alveolar ridge, with two side apertures for the escape of air (or voice), as shown by the dotted lines. Soft palate shut against back of pharynx. Sound: L as in all

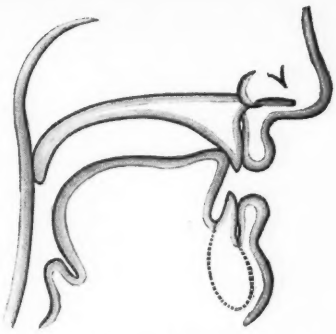


Fig. 6. Point of tongue shut against alveolar ridge, and soft palate shut against back of pharynx. Sound: T as in cut; D as in cud

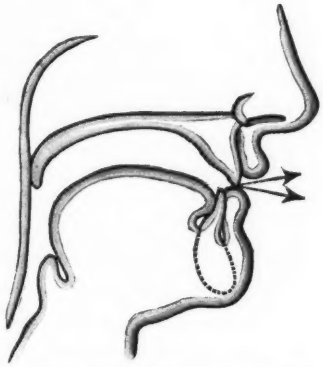


Fig. 7. Lower lip placed against edge of upper teeth, and soft palate shut against back of pharynx. Air (or voice) permitted to escape through the interstices of the teeth, as shown by dotted lines. Sound: F as in luff; V as in love

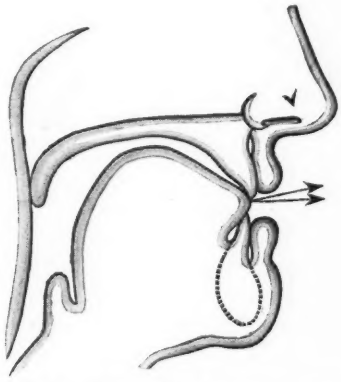


Fig. 8. Point of the tongue placed against the edge of the upper teeth, centre aperture between the front of the tongue, and the centre of the hard palate, and the soft palate shut against the back of the pharynx. The passageway is quite small all along the front of the tongue to the point, where the air (or voice) finally escaped through the interstices of the teeth, as shown by the dotted lines. Sound: Th as in teeth

The following method of constructing a denture, to meet the requirement of correct speech, is quick and simple, and has proven itself highly satisfactory in every case since its inception. The impression and bite is taken in the usual manner (being sure to mark the length of the

lip on the wax baseplate). When the teeth are placed on the trial plate, the anteriors are slightly spaced, while the incisal edges are allowed to point outward very slightly, and come a fraction lower than the lip line. (Trubyte teeth are better adapted for this work than any other make). The trial plate is nicely waxed when the teeth have been arranged, care being taken to have the anterior alveolar ridge, well shaped, and a little bit full. The trial plate is then inserted, and the patient requested to utter the word, teeth. By sitting low, directly in front of the patient, and watching closely, it will be seen whether the tongue goes directly to place against the incisal edges of the anterior teeth. If the tongue goes

Fig. 9

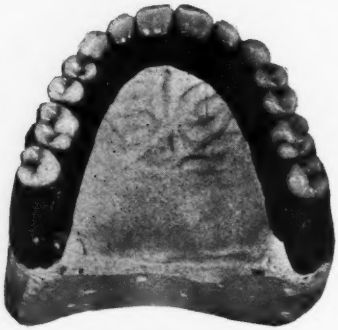


Fig. 10

either higher or lower than the edge of the teeth, the teeth must be raised or lowered, so that the tongue goes directly to place, against the edge of the anterior teeth. Usually no change in their length will be necessary, if they have been set so that their incisal edges come slightly below the lip line. A slight space between the curve of the tongue, and the lateral and cuspid of one side, is sometimes noticeable, in which case those teeth must be brought back to conform to the curve of the tongue. It is also important that the teeth be not set inward, so as to allow the tongue to protrude during the uttering of the word, teeth. (See Fig. 8 for correct position).

The alveolar ridge is next made perfect. The patient is instructed to utter the word, ballall. If it is not clearly enunciated, a small amount of wax is added to the anterior alveolar ridge, and the experiment repeated. If on the second trial there is no improvement, the wax alveolar ridge is gradually scraped away, and the experiments carried on until the word is uttered clearly, and is well defined.

For the final test the word, sunun is used. If the patient can utter the word distinctly, the case is perfect. If, however, the articulation is not clear, it is because a small amount of air is escaping, at an unnoticed

hollow place in the wax of the anterior alveolar ridge. This should be quickly found, and the leak remedied, by adding a small amount of wax where necessary.

With the exception of the palatal covering, or base, the model denture is now perfect. For perfecting the base plate, a method is now used, that not only produces an extremely thin and uniform baseplate, but also

Fig. 11 A

Fig. 11 B. Same as Fig. 11 A except that the cast has been removed, and shows wax ridge and teeth in the compound

brings the case from the vulcanizer with the entire lingual surface polished. It is necessary that the base-plate be extremely thin, so that it will not impede the tongue during the movements necessary to the articulation of such words as, hue, you, his, hiss, etc., etc.

The entire palatal portion of the wax denture is now cut away (see Fig. 9), the teeth attached to the wax alveolar ridge and facing are placed on the plaster case, and sealed to place with sticky wax (see Fig. 10).

The case is then put aside for a few minutes, and enough modelling compound to fill the lower half of an ordinary plate flask, is softened in hot water, and made into a ball and placed in the centre of the lower half of the plate flask. Whilst the material is soft (but not so hot as to soften good wax), the plaster cast with teeth attached is pressed into the soft compound, in such manner as to have the ball of compound completely

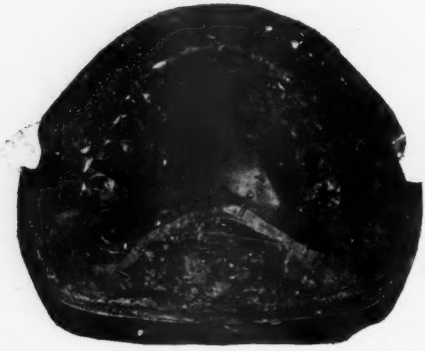


Fig. 12 A, showing compound impression of case after cast, wax, and teeth have been removed

Fig. 12 B. Plaster counter of die shown in Fig. 12 A

fill the vault of the cast, and take a good impression of the entire lingual aspect of the case, which includes, cast, wax alveolar ridge, and necks of the teeth (see Figs. 11 A, 11 B).

Before removing the cast and teeth from the compound, chill same in water until the material is quite hard. The surplus compound is then cut away, and the upper half of flask placed in position and filled with plaster of Paris. When the plaster is hard, the flask should be separated without using heat, which would soften the modelling compound.

The separated flask presents a perfect die and counter die (see Figs. 12 A, 12 B) which is then used for swaging a baseplate, or palatal covering, which is to take the place of the wax palate, which has been cut away from the model denture. As a material for making the baseplate, sheet lead is the most desirable, it swages easily, is cheap, and can be had in sheets of any desired thickness. Twenty-two gauge is an ideal

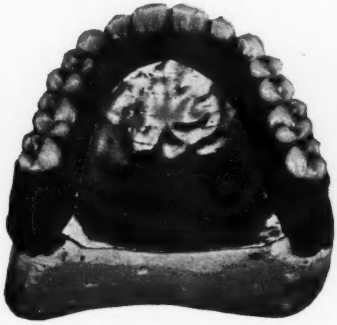


Fig. 13. Swaged lead base, replacing the wax palate

Fig. 14. Polishing plate placed over the lead base, case ready for flasking

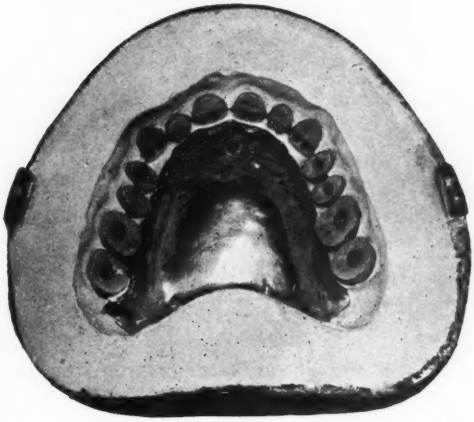


Fig. 15. Separated case, polishing plate in position, and ready for packing

thickness, and the resultant vulcanite will not only have sufficient strength, but owing to the method of vulcanization, will stand more stress than the average denture.

A piece of sheet lead is then placed between the halves of the flask, and the two parts brought together in an ordinary flask press. The

swaged lead is then removed, trimmed to cover the exposed cast, and sealed to place (see Fig. 13).

The last step is to make a polishing plate, or tin form, against which the lingual palate rubber is vulcanized. Thirty gauge, pure tin plate, is most favorable, it swages easily, but has enough body to make its handling easy. The flash die and counter is then used a second time, and the tin polishing plate swaged in the same manner as the lead base.

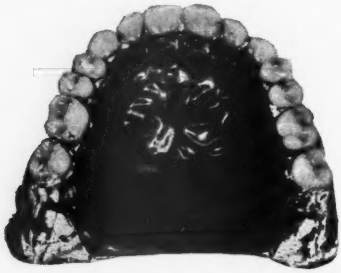


Fig. 16. Just out of the flask. Note the high polish of the glazed palatal surface (quite a contrast to the roughness of the plaster coated rubber over the tuberosities).

Fig. 17. The enlarged view of this, the first case, made by the author, shows the absolute uniformity of the palatal covering

The swaged tin plate is then trimmed so as to cover the entire palatal portion of the model denture, and burnished snugly around the necks of the teeth. The posterior edges of the polishing plate are then turned upward, so as to be imbedded in, and firmly held in place by the plaster in the upper half of the flask (see Fig. 14).

The case is then flasked in the usual manner, and when separated the lead base is removed, exposing the polishing plate, against which the rubber is then packed (see Fig. 15). Vulcanize in the usual manner.

Figure 16 shows the denture as it comes from the vulcanizer, the entire palatal portion polished. Figure 17 shows a cross section view of same; note the uniformity of the excised edge.

WHY PORCELAIN FACINGS COME OFF—AND THE REMEDY

By H. W. Gooderl, D.D.S., Chicago, Ill.

This article was awarded the third prize in the Prosthetic Articles Contest

Ever since bridge work was introduced we have been annoyed by patients coming to the office and unfolding a piece of tissue paper to display a facing broken from a beautifully constructed bridge put in for them, perhaps only a few weeks previous, and stating that: "They were only eating a soft piece of bread, and it came off right in the mouth." And perhaps you suggested that they must have been drinking hard water to break it.

The most embarrassing part is that you generally have several prospective patients sitting around listening to the conversation.

Several years ago I was annoyed so much by failures of facings that I determined to find the real cause of the failure.

My first step was to examine the next repair very closely, and make a note of my observations. Now all the repairs of this character that came in were not mine, but some of the work was excellent, ever so much better than I was able to do, yet still the facings came off.

After six months' observation and tabulation of same, I found that there were several causes, viz.—not spacing the porcelain enough, solder creeping under the backing, and borax coming in contact with the porcelain.

Taking several porcelain facings all from the same maker, I backed them up with different metals of varying thickness, invested them in series of ten and flowed 18K solder over each to a considerable thickness being careful to have nearly the same amount on each.

The results were as follows:

BACKING	GAUGE	METAL	RESULTS
24 k	40	Gold	Facing checked
24 k	36	Gold	Facing checked
24 k	30	Gold	Facing checked
24 k	26	Gold	Facing not checked
22 k	40	Gold	Facing checked
22 k	36	Gold	Facing checked
22 k	28	Gold	Facing not checked
22 k	30	Gold	Facing not checked
	40	Pure Silver	Facing checked
	36	Pure Silver	Facing not checked
	28	Pure Silver	Facing not checked
	40	Pure Platinum	Facing checked
	36	Pure Platinum	Facing not checked
	30	Pure Platinum	Facing not checked
	28	Pure Platinum	Facing not checked

After soldering, the facings were cooled and lifted out of the investment, and then ground down on a carborundum wheel on the lathe, keeping the stone wet.

The check in every facing was exactly alike as illustrated in Fig. 1. This convinced me that there was one main cause, and that was the shrinkage of solder, as none of the facings backed with the heavier plate had checked, with the exception of the ones backed with silver.

Fig. No. 1

Fig. No. 2

Fig. No. 3

Fig. No. 4

Now on looking over my record of repairs, I found that about 80 per cent. were caused by apparently the same thing, viz: Shrinkage of the solder.

Having satisfied myself on this point, the next thing was the remedy, and by using the following method I have had no facings to replace (on my own work) in the past twelve years.

I grind the facing and bevel the edge as in Fig. 2. I then swage a piece of pure gold 36g. using any of the tube swagers with soft rubber plungers, over the facing, following it with a piece of 22k, 30g. When they are swaged approximately together remove carefully so as not to distort, and sweat them together with 20k solder.

After they are thoroughly sweated together lay some large pieces of 20k solder on the surface and fuse them down over the Bunsen, build it up especially heavy on the cutting edge; this will give you a good tip on the anterior teeth. On Fig. 3, and on bicuspids and molars the solder will flow readily under the cusps.

Now mix a little good oxyphosphate cement and touch around the pins, press the backing in place, spur the pins with your knife (Fig. 4) and cut them off.

Don't use copper or silicate cement or you will crystallize the platinum pins under the backing and the facing will come off before you cement it in place if you are not careful. The object of the cement is to prevent solder getting under the backing at that point.

After the teeth are backed in the manner described only one more point is necessary to observe and that is, allow sufficient space between the porcelains to compensate for the shrinkage of the solder, and always remember that the lower the grade solder used the greater will be the shrinkage, so space the porcelain accordingly.

Heavy gold tips on anterior teeth are no protection to the porcelain, if the facing has been checked; it will sooner or later break off and have to be replaced.

I have seen bridges, and crowns that have been worn for years with no sign of a tip and they were as solid as the day they were put on, and because the facing was not checked in soldering.

THE DENTAL DIGEST CONGRATULATED

DEAR DR. CLAPP:

I have read with much interest the very practical and instructive article by Dr. Hergert, and the DENTAL DIGEST is to be congratulated upon securing it. It will be a very encouraging article to the more progressive dentists, who have been substituting dentures for *plates* and articulation for occlusion. And may I not say what I have been thinking? The check, the nine hundred, my but won't that be an inspiration for those who **don't like plate work!**

When a dentist knows that articulation can be had, and occludes his dentures when the patient is quite willing to pay for articulation, that dentist to my mind is rendering commercial and not professional service. More power to Doctor Hergert.

Thankfully and respectfully,

OHIO.

THE COLORADO SPRINGS SCHOOL DENTAL INFIRMARY

By B. Frank Gray, D.D.S., Colorado Springs, Denver

The dental infirmary of the Colorado Springs Public Schools is believed to be one of the best equipped establishments of its kind in the country. The brief details of its acquisition and maintenance may be of interest and value to other communities contemplating this work.

Operating room of Colorado Springs School Dental Infirmary

The Colorado Springs Dental Society offered to furnish adequate dental service for those children of the public schools whose teeth were (for financial or other reasons) being neglected. It was stipulated, however, that suitable equipment for an operating room must be provided by the citizens of the city.

The School Board evinced a considerable degree of interest in the undertaking, and agreed to furnish a room adapted to the needs of the work. Finally the Civic League appointed a Committee, to work in conjunction with certain professional men of the city, including representatives of the schools, physicians, and dentists. The object of this Committee was to secure the necessary funds to purchase the equipment.

The Committee was headed by an able Chairwoman, and so well was its work done that in a very few weeks' time more than eight hundred

dollars was collected. The funds came, not only from private subscriptions, but the Parent Teachers' Associations became interested and assisted very materially. Entertainments were given at some of the school buildings, and one day's proceeds from the principal Moving Picture Theatre were donated to the fund—the school children selling many tickets for the day's performance.

The equipment was promptly purchased. In point of quality no sacrifice was made, only the highest grade of everything being selected.

The Infirmary is located in a splendidly lighted room in the new High School Annex. The services of Dr. A. C. Driehaus were secured for three half days of each week. At the present time the work is being carried on with much satisfaction, and with the expressed approval of the School authorities.

The patients are originally selected by the School Nurse, who provides the pupil with a card bearing her own signature and that of the Principal of the School. The card indicates that the pupil in question is entitled to free dental service. Likewise, the card bears the request (with signature) of the parent or guardian, that such free dental service be granted the child.

A record is made by the school authorities of the standing of each pupil at the time he is sent to the Dental Infirmary, and it is expected at the end of the school year that his record will again be noted, in order that some idea may be arrived at as to the practical advantage of the work.

The Colorado Springs Dental Society has made itself responsible for conducting this service for the current school year only. It is believed thereafter that the Society will be relieved of financial responsibility in the matter.

Attention is called to the obvious advantage, in all such undertakings, of having dental service performed by a stated operator, employed by the Dental Society, in preference to the rotation of service of the various dentists comprising the organization.

FORSYTH DENTAL INFIRMARY FOR CHILDREN

By the opening of a Post Graduate School of Orthodontia, the Forsyth Dental Infirmary for Children is fulfilling one more of its functions as conceived by President Emeritus, Charles W. Eliot, in his address at the dedication exercises, as one of its most important influential duties, the education of the profession and the public.

While the School is not the first to be established in this important field of Dentistry, it is the first to adopt a full academic year of instruction. The curriculum is comprehensive and includes not only the technical dental subjects but also all of the allied medical branches that have a bearing on the development of the child. The unsurpassed clinical facilities of the institution, which are already demonstrated, will provide the student ample opportunity to acquire the practical experience necessary. Emphasis will be laid on preventive orthodontia. The faculty includes not only local men prominent in their branches but also a large number of specialists from the East and Middle West.

DENTISTRY ON THE FILM

By Ernest A. Dench, Brooklyn, N. Y.

The motion picture players are walking advertisements for dentists and tooth paste manufacturers. While beautiful teeth are an asset in everyday life, they are even more so in the photo-play profession.

The photo-players depend much upon facial expressions in depicting the emotions. Without perfect teeth they are seriously handicapped. You have only got to watch them on the screen to realise how good dental displays help their work.

When some or all of their natural molars are defective they naturally have to fall back on false ones. Cinematography is a very peculiar art, as it often produces totally different effects. Take, for instance, gold teeth. Woe betide an actor who possesses them if he neglect to fix them up prior to appearing before the motion picture camera. Movie audiences would speedily jump to the conclusion that some of his teeth were terribly decayed, for they actually photograph black! This is why the players apply whiting to their metal molars.

Both the scenario writer and photo-play director consider the practice of dentistry legitimate comedy material. It is a theme which can be made to provide plenty of the stuff they like—action.

The motion picture dentist, however, is a brutal creature in that he seems to revel in torturing his patients as much as possible. To painless dentistry he is evidently oblivious, for he gets busy with all the implements of the profession, and thinks nothing of hitting patients on the head with a mallet or exerting all the foot pressure he can.

How this sort of thing must impress the twenty million movie fans in this country cannot be accurately discovered. A friend of mine, however, who badly wanted his teeth fixed, was so impressed by dental photoplays that he dreaded having it done and put off visiting the dentist as long as he could. Of course, if dentistry was practised as in real life a good deal of the fun would be absent, so for this reason I suppose the movie producers consider they are entitled to use a little license in the matter.

As if to atone for this reflection on dentists, the motion picture was employed during 1912 to spread the gospel of good teeth. The film has proven an able assistant in many branches of science, but it was left to Dr. Cunningham to discover the possibilities of dental cinematography.

As founder of the Children's Dental League he realized that his slides and lecturers were out of date. He wanted something so strikingly convincing that the lesson would go right home. Dr. Cunningham could have doubtless obtained some victims of bad teeth and paraded them in circus fashion, but this plan did not please him. The scientific films he saw at the International Hygienic Congress in Paris convinced him that a film would enable him to cover much territory at once, show the harm wrought by defective teeth at close range and cover the subject thoroughly in a short time.

He approached a leading French film producing concern having a large laboratory for the production of educational subjects, and arrangements being satisfactory to both parties the producing of "How to Save a Nation's Teeth" was commenced. A whole year was consumed in the making, yet the net results were only two thousand feet of film, sufficient to occupy the screen for thirty-five minutes. But that seemingly insignificant film depicted teeth as they grow from birth to adult age. The advent of the former stage was covered by the Symington radiograph. The upper and lower molars were shown working. This was done with the aid of clever models and still photographs. The second reel was given over to the ravages, for which microbes are mainly responsible, arising from decayed teeth.

Sweden was the first country to be honored with the film, which made its début before the Ministers of Civil Affairs and Education. For not holding the exhibition in a proper motion picture theatre, the police arrested Dr. Cunningham and imposed a fine. So he looked about for such a place and hired the Brunkebergsteatern, the most pretentious cinema show in Sweden. Here the film was shown to the press and four hundred delegates of the International Federation.

Dr. Cunningham produced the film for general educational purposes and not with the idea of teaching dentistry to those in the profession.

Human interest was imparted to the film lecture by following it with a picture showing teeth drill in a Swedish School.

Who now doubts that the motion picture is not a Dr. Jekyll and Mr. Hyde?

326 DECATUR STREET

TEETH AND CHIVALRY

BY ARTHUR L. H. STREET, MINNEAPOLIS, MINN.

A year or two before Columbus discovered America, the Earl of Rivers, an English cavalier whose passion for warlike scenes survived restoration of peace in his native land on the defeat of Richard III, appeared at the court of Spain to assist King Ferdinand in subjecting the Moors. The proffered aid was accepted and, in the course of an attack upon a Moorish stronghold, a stone hurled from the battlements struck the impetuous Earl in the face, permanently depriving him of two front teeth, as well as temporarily depriving him of consciousness. Irving, in his "Conquest of Granada," pages 153–158, Everyman's Library Edition (E. P. Dutton & Co., N. Y.), gives this sequel to the incident:

"His Majesty consoled him for the loss of his teeth by the consideration that he might otherwise have been deprived of them by natural decay; whereas the lack of them would now be esteemed a beauty rather than a defect, serving as a trophy of the glorious cause in which he had been engaged."

The Earl replied, "that he gave thanks to God and to the Holy Virgin for being thus honored by a visit from the most potent king in Christendom; that he accepted, with all gratitude, his gracious consolation for the loss he had sustained, though he held it little to lose two teeth in the service of God, who had given him all."

"A speech," says Fray Antonio Agapida (a Spanish historian) "full of most courtly wit and Christian piety; and one only marvels that it should be made by a native of an island so far distant from Castile."

". . . Queen Isabella received him graciously, complimenting him on his courageous conduct at Loxa, and condoled with him on the loss of his teeth. The earl, however, made light of his disfiguring wound; saying, that 'our blessed Lord, who had built that house, had opened a window there, that he might see more readily what passed within. Whereupon the worthy Fray Antonio Agapida is more than ever astonished at the pregnant wit of this island cavalier."

PYORRHEA ALVEOLARIS

L. N. Rudy, D.D.S., Glendale, Cal.

Ever since dentistry has been a recognized profession and a scientific branch of medicine, many theories have been advanced as to the causes of the disease known as Pyorrhea Alveolaris.

This disease has become so common in late years that it is attracting the special attention of all schools of medicine and the laity as well. It is well that the alarm is spreading as rapidly as it is, when we consider the inroads this disease is making into the health and comfort of the people of to-day.

One writer has said that almost one hundred per cent. of all men and women over forty years of age have pyorrhea in a greater or lesser degree.

It is not so much the suffering and inconvenience prior to, and the final loss of the teeth, as it is now recognized as a great blockade to the physician in the treatment of almost all general diseases.

The treatment of any disease is usually very simple if the real cause is known.

Ever since this disease was named "Rigg's disease" investigators have been seeking its real cause. For many years the most generally accepted theory of this disease has been that it is some form of uric acid disturbance together with a local deposit on the necks and roots of the teeth. Later this fort was bombarded by Bass and Johns by advancing the theory that the whole trouble was due to endamœbæ buccalis. Their treatment was the administration, internally and locally, of a special preparation of ipecac. This treatment was known as the Emetin Treatment.

Still later came Dr. M. H. Cazier, M.D., of Chicago, who, after some careful investigations, explodes all the theories that were ever advanced by claiming that the real cause of pyorrhea is a gradual necrosis of the alveolar process due to faulty circulation. He claims that the so-called deposit, having several different names, is not deposit at all but a remnant or fragment of the dead bone that still adheres to the root of the tooth. Germs of whatever sort make their invasion into these bony caves and recesses follow the necrosis but have nothing to do with the process of bone decay. He claims that the bone gradually dies as a result of starvation due to faulty circulation.

I believe the doctor has advanced the most sensible, the most reasonable of all the theories, and I heartily indorse all he has said, but he has not gone far enough to tell us why in this particular locality or part of the

body, the circulation becomes so imperfect as to cause death of the bone while it is not occurring at other places in the body.

There is a cause and a definite one, why the circulation in this particular part is so much interfered with as to cause death of the bony structure around the teeth.

By freezing any part of the body or by scalding you can so interfere with the circulation as to cause sudden death of the part, and just so surely can you get the same result gradually, by applying often cold a little less than freezing point and heat a few degrees less than the boiling point. Every dentist knows that thermal changes cause the death of the pulp inside the tooth. Then why is it not reasonable, at least, to say it will destroy tissue *outside* and around the tooth just opposite the main body of the pulp?

Why does the disease sometimes attack first, the crowned teeth and those having large metal fillings or inlays in them? Not so much because of misfitting crowns or overhanging margins of fillings as heretofore admitted, as the fact that these nuggets of metal collect the heat from the steaming hot foods and drinks and actually burn the very life out of this thin fragment of alveolaris around the necks of the teeth. By this I am saying that irritations do not constitute a factor in this disease.

I have inquired into the habits of a great many patients, both men and women, and have yet to find one of middle age or older whose teeth are still in place and in good condition who has not been very temperate as to hot and cold taken into the mouth. While on the other hand most people having pyorrhea will admit that they take their hot drinks just as hot as possible—the hotter the better, they say. There are many kinds of hot foods just as harmful as the hot and cold drinks.

If there is anything hotter than a cup of coffee or tea it is a bowl of hot soup. If there is anything hotter than hot soup it is corn on the cob. If there is anything hotter than corn, it is apple, pumpkin, or mince pie. If there is anything colder than ice water it is ice cream—and they serve them all at the dinner party. It is hot soup and ice water, hot foods and ice water, and the finish with ice cream and a "small black, please."

After having studied the theories so far advanced as the causes of this disease, after having made observations over a period of more than ten years, I am most thoroughly convinced that this great universal habit in the use of hot and cold drinks and hot foods is the bed-rock cause, the cause of causes of this most dreaded disease.

Dr. Talbot says, "the alveolar process is the all important part." So it is for when this is gone the teeth are gone also. The alveolar process is the foundation, the supporting structure of the gums and the life of this foundation depends on the circulation. You cannot have perfect circu-

lation if you freeze or scald the part, and the majority of people, middle aged or older, have these scalding hot foods and drinks three times a day or more.

This ever increasing, universal habit will explain a multitude of pathological conditions. In my opinion it will explain this hard rim of dead bone under the gum margin in the very beginning of pyorrhea and the patches of dead bone far down on the roots, in advanced cases, from which comes the blind pyorrhea abscesses.

It will account for receding pulps and pulp stones in perfectly sound teeth and the conditions known as hypercementosis.

I believe the time will come when the medical profession will recognize that a very great many of the infected lesions of the alimentary tract are caused primarily by the use of the scalding hot foods and drinks.

The highest mission of the dental and medical professions is the relief of human suffering. To do this, our first question to answer is what is the cause? Then the remedy. We get all truth by a process of reasoning and observation.

Pain in the body is as essential to the maintenance of human life as nutrition. Thorns, bruises, freezes, scalds, poisons, infections, and even extreme hunger would go unnoticed if it were not for pain. Pain is only a red flag, a signal of danger ahead.

Just a question or two. If this so-called deposit, is deposit from the blood, on the roots of the teeth, as per theory, then why do we not find it deposited in other parts of the body?

Why do house pets, dogs, and cats, that are fed on the scraps from our tables, not lose their teeth from pyorrhea?

Did you ever see a dog or a cat eat anything extremely hot?

If faulty circulation is the cause of the disease, why do we not have faulty circulation and the consequent necrosis in other parts of the body?

Why is the treatment of pyorrhea like a movie show—a continual performance?

Why is the elimination of pus from the sockets by emetin or other agents not a permanent cure for the disease?

If water at 212 degrees will destroy germs will not foods and drinks at a temperature slightly less, kill cells of the body whose normal temperature is 98.6?

If hot drinks and hot foods will so burn the lining of the stomach as to cause ulcers of the stomach, as reported in some medical works on diseases of the stomach, will it not destroy the process around the teeth when the teeth and surrounding tissues receive the foods and drinks at a higher temperature than the stomach?

If the mucous membrane of the mouth is burned, it sloughs off and

is soon replaced, but if the life of the process is gone, like necrosed bone in any other part of the body, it must be removed before new granulations will take place.

The best method of treatment of this disease is first to instruct patients that the temperature of foods and drinks taken into the mouth should not vary much from the normal body temperature, 98.6 degrees.

Second: Remove as much as possible of the dead bone by careful instrumentation. In places where it is impossible to remove with instruments make repeated applications of a 50 per cent. solution of sulphuric acid by means of an applicator made of a broken barbed brooch and a small amount of absorbent cotton. It is needless to say that care should be taken.

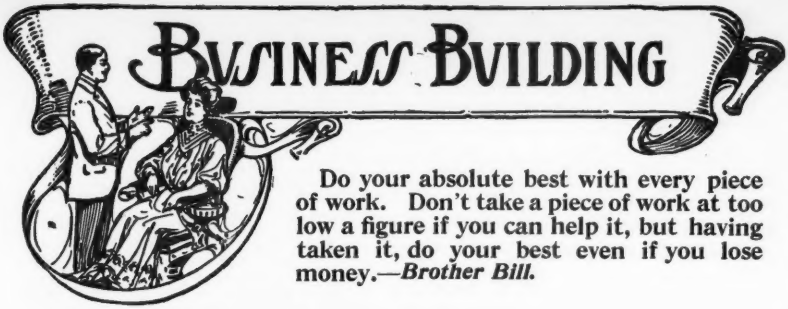
Third: Every kind of irritation that tends to cause resorption of the process must be removed, and these irritations are many in number, viz., malocclusions, overuse, fillings and crowns that are too long, improper use of toothbrush, misfitting crowns, neglect, overhanging margins of fillings, lack of use, salivary calculus, etc.

Fourth: A careful regular cleansing of the teeth, regular habits and regular exercise, plenty of fresh air, water and sunshine, anything that will raise the vitality of the body.

SUMMARY

1. The primary cause of pyorrhea is the use of foods and drink at extreme temperatures.
2. Irritations of whatever sort will produce rapid resorption of the process and must be removed.
3. Infection is secondary and has nothing to do with the basic cause of the disease.
4. The eliminations of the pus by emetin, mercury, vaccine, therapy, etc., does not constitute a permanent cure.
5. No set rule governing diagnosis or treatment can be made where the human element is involved.
6. No permanent cure can be effected without stopping the use of foods and drinks at extreme temperatures, and the removal of all irritations no matter what they may be.

The College of Dentistry, University of Minnesota, started the Four Year Course Sept. 15, 1915, with a full class of students. The limit in the Freshman Class is 90. Fifty or sixty students were refused admittance.



Do your absolute best with every piece of work. Don't take a piece of work at too low a figure if you can help it, but having taken it, do your best even if you lose money.—*Brother Bill.*

ANSWERS TO "WHAT WILL IT COST YOU TO FILL THIS TOOTH?"

In the October issue (page 635) prizes were offered for the best answers to the above question and the question "How did you learn this cost?"

On November 6th, when the contest closed, 40 replies had been received. Of these, ten showed a fairly clear understanding as to how the costs should be arrived at. The other thirty varied all the way from those who had the idea partly worked out, to those who were wrong in every particular. Let me give you the grounds for what I believe to be the perfect answer, and then print here some of the answers received.

THE PERFECT ANSWER

would tell how much gross practice the dentist had per year, the number of actual income hours per year, the office expense and salary for each of those hours; and the time required for a case like this from records and not estimates. Multiplying sum of the salary and expense by the required hours will give the cost of the inlay. The cost of gold was given as $0.87.

follows, the dentist's name being withheld by request. It shows in a fairly accurate manner, how the operating cost per hour is determined, and while it does not state that the record of the time required for the different steps of this operation has been from actual records in the practice, the total time given is in close agreement with the averages of a large number of similar operations, in my possession.

This answer is awarded first prize because the method of determining the expense per working hour is correct, because the number of working hours in a year is approximately correct, and because the time required for this operation is given with at least approximate accuracy.

THE FIRST PRIZE ANSWER

(Name withheld by request)

WHAT WILL THE INLAY COST ME, WHEN COMPLETE IN THE TOOTH INCLUDING MY REMUNERATION? ANS., $12.00

I learned this cost as follows:

My records show that my expenditures for the past year have been:

Depreciation 10% of $1,000	$ 100
Refunding Investment on $2,500 at 5%	125
Rent and heat at $30 month	360
Light at $3.50 month	42
Telephone at $4 month	48
Laundry, towels, etc	40
Assistant	300
Advertising and Publicity	350
Express and postage	25
Taxes	5
Insurance	50
Laboratory (Dental Mechanic)	1,200
Magazines	15
Society expenses	25
Supplies, an occasional new office fixture	435
Or a total cost of	$3,120
My records also show that my total income for the year past has been:	$6,240
Deducting	3.120
Answer	$3,120

which is left to me as a salary for the year's past services to my patients after all running expenses have been deducted

How much is my time worth as per above figures?

The calendar says there are 365 days in a year, especially in the last one.

I do not work Sundays nor holidays and take off an occasional week day. These during the year total up about 105 days. I therefore, work only 260 days during the year.

My records also show that I work at an average of 4 hours a day only. I therefore, work 260 days a year, 4 hours a day equals 1,040 hours in a year.

If my salary is $3,120 a year for working 1,040 hours, then dividing we have $3 per hour for my labor.

One can readily see that if the office income is $6,240 and the running expense, $3,120, then it costs 50 per cent. of the income to run the business. The other 50 per cent. is given to me as my salary.

I must therefore add the cost of the running expense of the office to the salary given me to get the cost of the inlay.

COST OF INLAY—TIME IT TAKES TO MAKE

1. Taking impression in wax in mouth	20	minutes
2. Investing	15	"
3. Dehydrating, occasionally watching a minute at a time, totalling up	15	"
4. Casting	20	"
5. Rough cleaning and polishing	20	"
6. Fitting, final polishing and cementing	30	"
Total	120	minutes

or 2 hours' time at $3 per hour—equals $6 for labor.

Labor equals 50% of what income should be, so 2 times $6 equals $12 or what inlay costs, including my remuneration.

I do not consider the 87 cents for gold in these figures, for the gold is part of the 50% running expense of the office.

THE SECOND PRIZE ANSWER

differs from the first in two important particulars, one of which is likely to lead to serious errors in estimating advance fees. It is that the number of working hours per year is so great as to be opposed to all the careful records of the sort which have been compiled.

This writer estimates upon the basis of 2,040 producing hours per year. It is humanly possible that he may have that many producing hours, but it is improbable. All the records obtainable show that few dentists have more than about 1,000 producing hours per year, and many have less. If he means merely working hours, he may be right, but if he means producing hours, he is probably in error. This error is so important that it will result in a wrong fee per hour, and thus make estimates for advance fees entirely wrong.

This answer is superior to any other in the fact that the time required for each step of the work is an average of 18 operations of this sort, of which accurate records have been kept. This is the only intelligent method by which a dentist can tell what operations cost him. If this dentist were to estimate his producing hours as 1,000 in the year, and multiply the fee here given by 2, he would probably have pretty nearly the

perfect answer, and the most accurate basis possible for estimating fees which are fair to the patient and himself.

SECOND PRIZE ANSWER

TO "WHAT WILL IT COST TO FILL THIS TOOTH?" ANS., $8.47

(Name withheld by request)

Showing actual time consumed in performing the various operations and processes involved, based on a record kept of 18 similar operations, and the time shown herewith is the average from the times consumed in the 18.

CHAIR		
Preparing and adjusting dam	14	minutes
Complete preparation of cavity	75	"
Making and carving wax pattern	29	"
Chilling, inserting sprue, removing	10	"
Filling cavity temporarily	7	"
LABORATORY		
Investing wax pattern	8	"
Drying—no time working		
Removing ring, putting on to heat	4	"
Preparing nugget of gold	3	"
Melting gold and casting	7	"
Cooling—no time working		
Removing inlay, cleaning, pickling	7	"
Rough trimming and filing	20	"
CHAIR		
Removing temporary filling	4	"
Adjusting cotton rolls, dry cavity	5	"
Trying in and further trimming	23	"
Drying and sterilizing cavity	7	"
Preparing and mixing cement	5	"
Setting inlay and burnishing margins	8	"
Final polishing	18	"
Total time consumed	254	minutes
Reduced to hours	4 hours	14 minutes

4 hours, 14 minutes at $2.00 per hour—$8.47.

The rate per hour is arrived at as shown on the following pages, which is from records kept for 12 consecutive months in my practice.

I have charged the same rate per hour for laboratory work as at the chair. While that work can be had for less money, the kind I do and require for my patients is worth $2.00 to me.

Ascertaining revenue per hour, office must produce to make a practice of $3,500 per year, which are figures from 12 consecutive months carefully kept.

INVESTED CAPITAL

Office equipment	$1,800
Education	1,500
Time in school	1,500
Total capital	$4,800

FINDING WORKING DAYS

Days in year		365
Deduct for Sundays	52	
Deduct for holidays	8	
Deduct for vacation	15	
Deduct for sickness	10	
Total		85
Net working days		280

FINDING WORKING HOURS PER YEAR

8 working hours per day		2,240
Deduct for broken appointments	80	
Deduct for time consumed in receiving and dismissing patients, based on 5 minutes per patient and 5 patients per day—hours	120	
Total hours lost		200
Net productive hours per year		2,040

EXPENSES

Depreciation and interest on capital, 10%	$ 480
Refunding investment 5%	90
Rent	240
Telephone	30
Electricity	25
Laundry	35
Precious metals	260
Other supplies	225
Taxes and insurance	27
Postage, express, stationery	26
Publicity	20
Drugs	14
Society expenses	30
Papers and magazines	10
Charity work	50
Salary	2,000
Total	$3,562

2,040 producing hours to earn $3,562 makes actually $1.77 per hour, but to offset unexpected lost time and other unlooked for losses, I have made it even money, $2.00 per hour. I think it low, too.

THE THIRD PRIZE ANSWER

(Name withheld by request)

The third prize answer gives about the same facts as the others, but does not give them in the same detail, so that one can see that they have been arrived at accurately.

Question No. 1 = $7.50

Question No. 2 = As follows:

The total of one year's expenses including depreciation and the refunding investment but not including precious metals—$1,255.48.

My salary is $2,400 a year added to $1,255.48=$3,655.48.

I have 924 income hours a year. Dividing total practice by 924 hours, $3,655.48 ÷ 924 = $3.95 per hour, which should be received for the work + cost of material used.

Preparation of cavity	12	minutes
Wax impression and carving and removing from mouth and setting to sprue	18	"
Investing in ring and setting	15	"
Heating over burner in the meanwhile casting appliance and blow torch can be gotten in shape for use and gold ready	15	"
Casting and taking from ring	5	"
Polishing and fitting the inlay including removing sprue part of gold	15	"
Cementing in cavity, allowing cement to set	10	"
Final finishing	10	"
Total of	100	minutes
or 1 hour 40 minutes at $3.95 an hour (for time taken)		$6.59
Cost of gold		.87
		$7.46

THREE OTHER ANSWERS

Three other answers followed closely on the three prize answers, and are given here.

No. 4

I am sending herewith an estimate of the cost of placing an inlay as described in the October issue of the DIGEST. I believe it speaks for itself. The question is "What will this inlay cost you when complete and including your remuneration?"

My result is $12.70.

I arrived at this estimate simply by summing up the expenses calculated on a basis of working 5 productive hours per day for twenty-six days per month. Salary or remuneration at $5 per hour.

Rent and heat at $30 per month.
Phone at $4.50 per month.
Depreciation 10% per year on an $1,100 investment.
Interest on same investment at 6%.

Light for reception room, $1 per month.
Tax, $4 per year on $200 valuation.
Insurance, at the rate of $7.90 per thousand

	CAVITY PREPARATION AND MAKING WAX MODEL 1-HR.-TIME	INVESTING ¼ HOUR	CASTING ⅓ HOUR	SETTING INLAY ½ HOUR	POLISHING AND FINISHING ½ HOUR	TOTAL
Salary at $5 per hr.	5.00	1.25	.83	1.25	2.50	....
Rent and heat	.23	.05	.03	.05	.11	....
Supplies	.02	.02	.01	.01	.03	....
Phone	.03	....	....	....	.01	....
Laundry	.02			.02	.02	....
Depreciation	.06	.01	.01	.01	.03	....
Interest on investment	.04	.01	....	.01	.02	5.43
Light (Reception Room)	....	....	....	....	....	1.36
Tax	....	....	....	....	....	1.78
Insurance	....	....	....	....	....	1.38
Gold	....	....	.87	....	....	2.75
	5.43	1.36	1.78	1.38	2.75	12.70

Estimate made on basis of 5 productive hours per day for 26 days per month.
Salary on basis of $5 per productive hour.

No. 5

What will it cost me to fill tooth with gold inlay, including my remuneration?

Ans. $13.

How did I learn the cost?

Ans. I estimate that it will take me 3 hours to do all of the work, including adjustment of occlusion, etc., which I find has to be done always after setting any inlay.

3 hours' labor at $4	$12.00
Gold	.87
Plaster, etc.	.13
	$13.00

I value my time at $4 per hour, according to the following figures. Out of the 365 days of the year, 52 are Sundays, 8 are holidays, and for vacations, conventions, etc., I take each year 30 more, leaving 275 working days.

As a result of carefully recording all of my time, I find that I work 10 hours per day for 275 days, but that only 46 per cent. of my time is income producing.

This leaves me 1,285 hours per year in which to earn my yearly fees.

At $4 an hour, my income is $5,180.

This gives me a salary of $2,500 a year, and enables me to pay all

fixed charges, according to your schedule on pages 633 and 634, which I think is ideal.

My practice is confined almost entirely to people of moderate means, only a few earning more than $25 a week.

Under these circumstances a salary of $2,500 a year, is about "all the traffic will stand."

Hence my charge of $12

No. 6

Including my own remuneration, I find the entire cost of inlay to be $3.70.

I learn the cost after much figuring and examination of my records, this way:

I am in my office about 2,400 hours per year and nearly half of that time is spent in actual dental work. I find my operating costs per year (not counting gold) to be $410, and my cash income per year is $1,664.50.

Therefore my actual running expense per hour is 17½ cents, and I find that I have been giving myself 95 cents per hour remuneration for actual working time.

The time I take for such an inlay as this is as follows:

Getting patient in and out of chair	4 minutes
Service selling talk	10 "
Preparing cavity	20 "
Wax manipulation	25 "
Investing and drying inlay	30 "
Casting and cleaning inlay	12 "
Setting and polishing inlay	40 "
Talk and settlement	8 "
Care and instruments, etc., after operation	4 "
Recording case and cash entry	3 "

Total time for inlay is 2 hours and 36 minutes.

My operating expense for said time is	$ .45
My own remuneration for said time is	2.38
Cost of gold as stated in question, is	.87
Total cost of inlay	$3.70

WHAT CAN THIS DENTIST DO?

One dentist who desired to answer the questions wrote as follows:

"My dear Dr. Clapp:

"I have given the question, 'What will this inlay cost?' considerable time in thought. In fact, were I to charge for my time (in thought), as I charge my patients for services, even if I won the ten dollars, first prize, it would not pay me to bother with it.

"This question might seem to some a very easy one to answer, but a man who has kept records in his business will find it a very difficult one. I have tried to figure from different

angles, to make sure that I was right in my deductions, but I get a different result every time. However, I would be pleased to meet you and go over the matter personally. It would be a pleasure to me, although I am sure that I will find out that I am charging about half the amount I should.

"Last night I thought for three hours, and thought my hair would turn gray."

I wrote him as follows:

"Suppose that instead of being a fellow dentist I was a patient who came into your office and said, 'What will you charge to fill this tooth?' Could you think three hours over the answer and then admit you didn't know? If you cannot answer this simple question, how can you be sure of doing justice to your patients and yourself?"

COMMON ERRORS IN ESTIMATING COSTS

Two errors stand out above all others for frequency of occurrence and unfortunate influence upon the results.

The first is the assumption that the rate of remuneration should be a certain sum per hour, say, $2 or $3 or $5, and that that rate will prove profitable. The mere fact that a certain rate per hour is received does not tell whether it is profitable or not. The dentist with a $2,000 practice needs to earn $2 for each of 1,000 income hours per year, and if he earns $3 in any hour, that hour is especially profitable to him. But the dentist with a $5,000 practice needs to earn $5 for each of 1,000 income hours, and if he earns only $3 in any hour, that hour is unprofitable to him. The necessary rate per hour cannot be determined by guess work, but only by record keeping.

The second common error is that there are 2,000 or more income hours per year. I have not enough records to make a really final statement on the average number of income hours per year, but all the best reports indicate that there are very few over 1,000, and the more exact the records, the nearer 1,000 hours they come. So it is safe to say that there are not 2,000 income hours per year, and that the hourly rate which is based on working 2,000 hours per year, is wrong and insufficient.

Here is an answer based on a very high estimate of the number of income-hours.

Cavity preparation	40	minutes
Wax impression	30	"
Sealing cavity with temp stop	5	"
Investing wax impression	10	"
Heating left to assistant		
Casting	10	"
Setting and finishing	60	"
	155=2 hours 35 minutes	

Allowing 7 hours a day for six days a week of actual operating and 48 weeks to the year, I will have worked 1,826 hours to earn a gross of $4,193 or $2.29 per hour.

2 hours 35 minutes at $2.29 per hour	$5.84
Cost of gold	.87
Cost	$6.71

Operating Costs	
Depreciation at 10%	$ 112.60
Refunding investment	56.30
Rent and heat	240.00
Light	30.00
Telephone	36.00
Laundry	50.00
Assistant	300.00
Publicity (cards, tickets, etc.)	100.00
Express and postage	25.00
Taxes	10.00
Insurance	14.00
Laboratory	360.00
Magazines and books	15.00
Society expense and clinics	50.00
Supplies other than precious metals	540.00
Precious metals	190.00
	$2,139.90
Total practice	4,193.00
Net	$2,053.10

THE OLD-FASHIONED METHOD OF ESTIMATING

When I began practice I was told that the gold for a filling would cost about 25 cents, and I should get $2 for the filling and more if I could. My profit on the $2 filling was stated to be $1.75.

The answer below figures out the cost of the inlay in greater detail than I was taught to employ, but it seems to me to omit most of the essentials. I do not see how this dentist can establish advance fees that are fair to his patients and himself.

Answer to first question	$8.00
Answer to second question is as follows:	
Rubber dam	.08
Spoiled 2 new burs	.22
Broaches, etc., for canals	.23
Wear of 2 stones	.10
Gas-inlay wax investment material	.15
1 per cent. on investment of $35 for casting machine	.35
Gold	.87
Total	$2.00
Total material, etc.	$2.00
Two treatments on canals	2.00
Mental strain and Tension on case described is eliminated because of simplicity of operation; therefore my remuneration is charged accordingly	4.00
	$8.00

The next answer is very much of the same nature and is figured out to the half cent.

The gold inlay will cost me $3.90 including the gold. Itemized as follows:

Gold	.87
Gas and electricity	.01
Wax	.001
Disks	.0175
Strips	.0005
Wear on burs and stones	.01
Wear on your outfit	.005
Labor	3.00

that does not include the treating of pulp and filling the canal.

I have learned the cost by seeing how long it took me to make an inlay in the molar.

Many other answers were not as accurate as these which have been reproduced here.

After the premium book has been out long enough for some of its principles to be absorbed, I'm going to ask some more questions. I venture to say that we shall have a much larger percentage of answers on an intelligent accounting basis.

THEM FLOWERS

(To Eugene Debs)

Take a feller 'at's sick and laid up on the shelf,
All shaky, and ga'nted, and pore—
Jes all so knocked out he can't handle hisself
With a stiff upper-lip any more;
Shet him up all alone in the gloom of a room
As dark as the tomb, and as grim,
And then take and send him some roses in bloom
And you can have some fun out of him!

You've ketched him 'fore now—when his liver was sound
And his appetite notched like a saw—
A-mockin' you, maybe, fer romancin' round
With a big posy-bunch in yer paw;
But you ketch him, say, when his health is away,
And he's flat on his back in distress,
And then you kin trot out yer little bokay
And not be insulted, I guess!

You see, it's like this, what his weakness is—
Them flowers makes him think of the days
Of his innocent youth, and that mother o' his
And the roses that she us't to raise:—
So here, all alone with the roses you send—
Bein' sick and all trimbly and faint—
My eyes is—my eyes is—my eyes is—old friend—
Is a-leakin'—I'm blamed ef they ain't!

—*Riley.*

CAN YOU IMPROVE MY INCOME?

ILLINOIS, October 31, 1915.

EDITOR *Dental Digest*:

Previous to studying dentistry, I was a telegraph operator, making $100 a month, lived in a $30 flat, no responsibility, and a regular income as long as I worked.

Was graduated from a first class dental school. Up to two years ago, lived in a poor neighborhood, and people as a rule paid the few dollars I asked for time and knowledge. My income was just as much as at present ($2,600 gross, $1,400 net).

Now, I pay $30 a month for office and $40 for flat, with same income as four years ago, and am on a five years' lease.

My equipment, office, and reception-room are superior to most offices on this street; everything is kept clean. I have a good personality, am clean, and a good reliable dentist.

Attend most of the clinics, dental meetings, state meetings, and occasionally a National. In every respect an ethical dentist. A very surprising thing to me is, that, only three fellow practitioners have had time to pay me a friendly visit. As for confidences exchanged between other dentists and myself, that, so far, has been out of the question.

Talking to a regular business man, he informed me, the poorest paid professional men are the preachers, next the dentists.

Three or four dentists close to me sleep in their offices or reception rooms, to save rent and they put up a fair sized front. My flat is first-class, such as I believe I am entitled to, as a high-class workman, but cannot get a dollar ahead and outside of $6,000 Life Insurance, would leave no estate for those dependent upon me.

I carry plenty of Health and Accident Insurance, Dentists' Liability, Burglar Insurance. Have got to do it.

Can you or any of your subscribers suggest anything to improve my income?

Yours truly,

L. E. H.

A. A. REPLIES AGAIN

Well Mr. Editor, I got two replies, one states I am ethical, signed R. F. P.; the other signed by T. J. S. Of course I desire the respects of my brother practitioners, but realize I could hardly gain enough of their so-called respects to assist me in footing my bills while I slowly proved to the public my ability.

By no means am I defending all those that advertise, for I know there are some careless ones and by no means do I defend the State Society (so-called) ethical ones, for the same reason there are some careless ones. I contend it's the man—an advertiser, state society or what not—it's the man. And so just because a fellow uses printer's ink, the kind we pay for (not the society column) is absolutely as ethical if he is on the square as any.

Of course we are all familiar as to what the term ethics means, that is asked on the State Board frequently. And if the term means anything like "giving your patient the best there is in you"—I am at a loss to know where all those ethical brothers were last week when the profession was notified there would be a lecture given free by a prominent enthusiast on the latest developments of impression taking with a closed mouth. Something in a better fitting denture.

Now the opportunity was at hand to gain knowledge for a better service to our patients. In a radius of 20 miles there are located a possible 800 dentists. Out of the 800 there were not over 50 present. Was I there? You bet I was, and on the front seat. I will always listen to something that will help me give better service to my patients. I will at least listen, and still I am a fake because I advertise with printer's ink. Whether it's the State Society Band, or the advertiser Band, I say it's the man and not the band.

"THE VIRTUES OF THE BETEL NUT"

LOS ANGELES, CAL., October 22, 1915.

Editor DENTAL DIGEST:

In October DIGEST I am the interested reader of an article by A. Monroe Woolley, Fort Casey, Wash., in which he lauds the virtues of the Betel Nut. To quote:

"The juice smears the tongue and lips a bright red, while it makes the teeth glisten with whiteness."

Does it? I am glad to have corrected an erroneous idea I have been fostering ever since a four years' sojourn in the far East and Equatorial districts, that all the black diamonds I saw shining from out the red lined mouths were caused by this self same vicious though preserving Betel Nut.

JOSEPH P. COPP.

VIOLATION OF LAWS

CALIFORNIA DENTISTS MUST PAY ANNUAL LICENSE FEE

(*California*) A question of much nicety with relation to the right to engage in the practice of dentistry in the state of California is presented in the recent case of Exparte Victor. Victor was engaged in the practice of dentistry in California. He was duly licensed by the State Board of Dental Examiners. At the time of his admission to practice the law did not require the payment of an annual license fee. In 1909 the law was amended requiring the payment of an annual license fee. The amendment also contained two clauses. One in almost direct conflict to the other. The first provided that the act or amendment "shall not affect the right under the laws of the State of California, of dentists to practice dentistry who have lawful right to practice dentistry at the time of the passage of this act." The second provided that "no dentist shall be exempt from paying an annual license tax as hereinafter provided." Victor refused to pay the tax basing his rights in the matter on the first clause. The Board of Examiners demanded payment from him under the second clause quoted. He refused and was taken into custody on a charge of practicing in violation of the law. The lower court found Victor guilty and he appealed to the California Supreme Court where the judgment was affirmed, the court saying:

"Taking the two sections together as amended, it seems absolutely clear to us that the intent of the Legislature was to exempt all persons who, prior to April 6, 1909, were entitled to practice dentistry in this state, from the requirement of making application for license or paying the general license fee; their status being recognized as having become fixed under the former law, that when it made provision for the payment of the annual license fee of $2 it not only in express terms provided that such provision should apply to every person practicing dentistry, but in order to leave no doubt of its applicability to all dentists, expressly provided that no dentist, without regard to when or how he became entitled under the laws of this state to practice dentistry, should be exempt from paying the annual license tax, which should apply to all alike. (Exparte Victor, 118 Pac. 975.)

NEGLIGENCE BY DENTIST

(*Kansas*) In a recent Kansas case for negligence by a dentist in the treatment of plaintiff's teeth, the plaintiff alleged that the defendants were engaged in the practice of dentistry under the name of "The office of the Smysers, Painless Dentists," at Garden City, and had in their

employ one Fox, an alleged dentist who attempted to perform all or a part of their dental work for patients coming to the office; that about the 27th day of April, 1912, the plaintiff called at the office to have a tooth extracted, which the employee Fox attempted to do, but that he wantonly, carelessly, and unskilfully used surgical and dental instruments which were in an unclean, poisonous, and septic condition, and wantonly, negligently, carelessly, and unskilfully grasped with his forceps the jaw bone and lower process below the lower right molar, instead of the tooth itself, and made three unsuccessful attempts to pull the tooth, fracturing the jaw bone below the right third molar, and mutilating the lower process above the tooth, and dislocating the jaw on the right side, resulting in her jaw becoming practically locked and so remaining for 12 days, causing her intense pain and suffering, followed by four months' inability to do anything.

It seems that on the day in question the Smysers were not at the office; that, after Fox had made his second unsuccessful attempt to pull the tooth, he said, according to plaintiff's testimony:

"'Just let me try once more, and I am sure I can get it.' . . . And he tried it again and got his forceps on and started to pull, and there was a noise that sounded a good deal like a nut cracking, and I felt just as though I had a hard shock, and then he quit pulling. He stopped. He then said that he had broken the tooth all to pieces, and that it would work out by itself. I asked him if there wasn't anything he could do to make it quit hurting me so, and he said to just go home and wash my mouth out with salt water and it would work out itself."

The plaintiff testified that the pain was such that she was compelled to stop on her way home and remain over night at a farm house, and that after suffering intensely for 12 days, during which time her jaw was locked and would occasionally jerk sideways and draw her head back with a very painful jerk, she and her husband returned to the Smysers' office, and that Dr. Smyser examined her tooth and said it was ulcerated and gave her a mouth wash and told her to go home for a few days and come back and he would pull the tooth. Afterward, on the same day, she had an X-ray examination by a doctor, and a consultation was called at the suggestion of Dr. Smyser or by him, and on the day following two of those who took part in the consultation went to the home of the plaintiff, and after giving her an anaesthetic pulled the tooth and also a sound one just in front of it. When Dr. Smyser learned that Fox had made the attempt to pull the tooth, he spoke of him as an "old fool," and said he was no good, and that he had discharged him as soon as he had returned; that he would not have a man in the office who would hurt any one pulling a tooth.

Plaintiff recovered judgment against the Smysers and an appeal was taken to the Supreme Court of Kansas where the judgment was affirmed. (Haskinson v. Smyser, 148 Pac. 640.)

DENTIST MAY VACATE PREMISES

(*New York*) A landlord is bound to keep the several apartments of a building properly heated and habitable, and where a dentist who maintains his office in his apartment is unable to carry on his profession on account of lack of heat he may vacate during the pendency of the lease. (Pakas v. Rowle, 152 N. Y. S. 965.)

PARENT'S LIABILITY FOR DENTAL SERVICES

By A. L. H. Street, St. Paul, Minn.

In a recent decision in the case of Sullivan vs. Liggins, 149 New York Supplement 517, wherein plaintiff unsuccessully sued to recover for dental services performed for defendant's minor child, the Appellate Term of the New York Supreme Court said:

"There may be circumstances where services or commodities of which a child stands in immediate need render the previous assent of the parents unreasonable or inexpedient to seek. In such a case the person procuring the supply is the agent of the parent *ex necessitate*. . . . That cannot be said of this case, where the suit is by a dentist to recover on a bill for $85 for dental work in filling the teeth of the defendant's eighteen year old son without the knowledge or consent of the parent. For a bill of such character the assent of the parent cannot be implied, particularly, or any member of his family, and where the parent was not shown to have had any knowledge of the performance of the services until after their completion. Where a minor goes to a strange dentist, by whom no member of his family has ever been treated before, and has dental work performed upon a representation that his father will pay, *the dentist should first ascertain whether or not the father* has authorized the work to be done, and if he failed to do so he cannot hold the father liable upon the theory of implied contract for necessaries."

Peridental Anesthesia.—Sometimes, where abscessed teeth for instance are to be extracted, it is not desirable to inject a solution into the gum tissues for fear of forcing pus into the tissues, the injection may be made directly into the peridental membrane. Take a small Gates-Glidden drill in the engine and drill a canal along the side of the root deep enough to secure a firm seating of the needle, and inject the solution slowly until anesthesia is complete.—*The Dental Register.*

DR. HARVEY J. BURKHART ELECTED DIRECTOR OF THE ROCHESTER DENTAL DISPENSARY

At a meeting of the Board of Trustees of the Rochester Dental Dispensary, held at the Genesee Valley Club on November 10th, Dr. Harvey J. Burkhart, of Batavia, was unanimously elected Director of what is soon to become one of the most effective and far-reaching eleemosynary institutions in this city, and which will culminate in the erection of one of the most perfectly equipped buildings for this work in the country.

The Board of Trustees feels that it has been especially fortunate in securing the services of Dr. Burkhart, not only because of his acknowledged professional reputation, but quite as well because of his splendid executive ability. Both William Bausch, President of the Board of Trustees, and George Eastman, whose fine gift made the undertaking possible, are extremely gratified that Dr. Burkhart has consented to accept the position.

Dr. Burkhart did not consent to serve as the executive head of this very important work without some persuasion. He is Mayor of the City of Batavia but he felt the call to the head of such a work as the philanthropy of Rochester has made possible could not be turned aside and finally consented to accept. He will remain in Batavia until his business matters can be arranged, and he will then take up his residence in Rochester.

Dr. Burkhart is a former president of the Eighth District Dental Society, which comprises the Western New York counties, and a former president of the New York State Dental Society, which office he held for three consecutive terms. He was president of the National Dental Association, and chairman of the executive council of the latter. He was chiefly instrumental in organizing that body and is still a member of its council. He is a member of the State Board of Dental Examiners.

Dr. Burkhart is the present Mayor of the City of Batavia. He was President of the Board of Education for many years.

Suppose your milk teeth all went sour.—*New York Sun.*

PRACTICAL HINTS

[This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions, and Answers should be sent direct to him.]*

SECURING RUBBER-DAM CLAMP ON CONICALLY SHAPED TEETH.—Sandarac varnish applied to a conical tooth will prevent the clamp from slipping.—J. A. MCCLAIN, D.D.S., *Oral Health.*

TO CLEAN SLAB.—To remove hardened cement from cement slab, rub slab and hardened cement with aqua ammonia, washing thoroughly afterward.

TO PREVENT CORD FROM SLIPPING.—A little beeswax and resin applied to the engine cord will prevent it from slipping.—JOHN C. HOPKINS, D.D.S., *Pacific Dental Gazette.*

FACILITATING REMOVAL OF WAX PATTERN FOR GOLD INLAY FROM CAVITY.—For facilitating the removal of a wax pattern for a compound gold inlay from a cavity, a staple of fine gold wire, both ends of which have been thickened to form tiny buttons, is heated and pressed into the wax pattern. When the pattern is finished, it can be withdrawn by grasping the protruding arch by means of pliers.—SACHS, *Oesterreichische Zeitschrift für Stomatologie* (*The Dental Cosmos.*)

EXTRACTING BADLY BROKEN DOWN MOLARS.—Take a cross cut fissure bur and separate your roots. In the upper molars cut mesiodistally, then buccolingually. In the lower molars cut buccolingually and extract your roots separately.

You will produce less trauma to the surrounding tissue, repair will take place in a shorter time, and it simplifies extraction to the minimum, especially when the roots diverge greatly or the roots are curved. If extraction is to take place under a general anesthetic I paint my field of operation with the tincture of iodine, then proceed to separate the roots. When completed I then administer the anesthetic. If local anesthetic is used I first inject and by the time the roots are separated the parts are well anesthetized.—FRED F. SCHWARTZ, D.D.S., Chicago, Ill., *The Dental Review.*

*In order to make this department as live, entertaining and helpful as possible, questions and answers, as well as hints of a practical nature, are solicited.

How to Direct the Flame While Soldering A Bridge.—Never attempt to solder a bridge by forcing the flame down into the hole, for it is a most difficult thing to do. The more play and freedom the flame has, and the longer you stick to the brush flame, the better will be the results.—*Pacific Dental Gazette.*

A Few Practical Things That Help.—A small piece of pure soap will be found useful in many ways during operations. The mouth mirror may be kept from clouding by coating the glass with dry soap and then wiping clean with a dry napkin. The edge of a sandpaper disk will not catch in the rubber dam when polishing fillings if it is first run in the soap. Disks and strips will cut faster and with less friction. Disks and strips thus prepared that are used in polishing gold will retain the particles of gold and if saved and refined will more than pay for the trouble. Use pure soap sparingly and it will not be disagreeable to the patient.—John C. Hopkins, D.D.S., *Pacific Dental Gazette.*

Facilitating the Management of Patients with Full Mustaches.—Patients with full mustaches are often difficult to work for, on account of the mustache shutting off the light. To prevent this, a piece of linen, about an inch wide, is fastened with the rubber dam holder across the lip.—*Australian Journal of Dentistry* (*The Dental Cosmos.*)

Removal of Fractured Roots.—There sometimes occurs an unavoidable fracture during extraction of a bent root—often the apical half or third of the palatal root of an upper molar, or perhaps of one of the roots of an upper first premolar. If the portion remaining high up in the socket should happen to be greatly loosened (a frequent occurrence), it is rather annoying to have to leave it and confess to an incomplete extraction, when the removal would be so very easy, if only one could get the least grip. In these cases I have sometimes found an absolutely new sharp, spirally barbed broach, inserted into the exposed pulp canal with a gentle screwing motion, very useful. If a "cleanser" be chosen of a size that will only just with difficulty enter the canal, its barbs will bite into the dentin quite strongly enough to allow of the withdrawal of the loose fragment with a careful and straight pull.—E. Holman, *Brit. Dental Journal* (*The Dental Cosmos.*)

Platinum Post in Porcelain Inlays.—A method of making a platinum post for retention of porcelain inlays located on the incisal portion of centrals, laterals, and cuspids. This consists of preparing the cavity with the best retention possible, then drilling the hole into which the post is to fit, and burnishing the matrix. The post is made of

36 gauge platinum cut about one millimeter in width and about 2½ times the depth of the hole in length. Two slashes are cut in one end, about one half the length of the piece of platinum, and it is then rolled into a post. Slitting the piece of platinum twice, leaves three free ends. After the post is put in place, these three little free ends are arched over until each one comes in contact with the matrix. The post and matrix are then removed, and after heating them to remove all foreign substance from the platinum, replace the post in the matrix. By taking care to have the three little legs in contact with the matrix, we know that the post is in exactly the right relation to the matrix. A little high fusing porcelain is placed on the matrix and worked into contact with the post. Care must be taken not to change the relation of the post to the matrix. As soon as the porcelain has dried out so as to be firm, the matrix is put into the furnace and the porcelain fused. The case is then carried to the cavity, reburnished and swaged with the sticky wax; the procedure from there on is the same as with any other inlay.—F. H. SKINNER, D.D.S., Chicago, Ill,, *The Dental Review.*

THE RETENTION AND BURNISHING OF MATRICES FOR PORCELAIN INLAYS.—In the cavity preparation, I aim to get at least two walls parallel to each other, and when possible, I shape the cavity so that the inlay, when finished, will slide in from only the direction from which the stress of mastication is exerted.

In burnishing the matrix, the platinum is carried to place between two pieces of thin china silk, which enables one to carry the platinum to the bottom of the cavity without tearing it. In burnishing, always begin by using a rotary motion near the margins of the cavity, gradually working down into the deeper portions, or, in other words, sort of spinning the platinum into place. The matrix will sometimes break in the bottom of the cavity or in some important retention angle. These breaks can be patched by placing a small piece of platinum over that portion and burnishing it into place; solder with a small thin piece of pure gold; I use a little piece unrolled from a Rowan's or Pack's cylinder. After soldering, the matrix is carried to place, reburnished and finally swaged to place with sticky wax. The wax is put into the matrix hot enough to stick to the platinum, then allowed to cool to a thick putty consistency, when it is pressed firmly to place. This swages the matrix and eliminates the danger of distortion in its removal. The wax is burned out by laying the matrix on a block of clean charcoal, wax side up, and bringing it to a white heat with a blow pipe. Shellac varnish is used on all margins of the matrix, which, as soon as the varnish is dried, is filled with porcelain and baked.—F. H. SKINNER, D.D.S., Chicago.—*The Dental Review.*

MASTICATION AND FOOD UTILIZATION

Again and again in everyday life we find that some dictum which either commends itself to common sense or lends itself freely to argumentative proof is being made the basis of a widespread propaganda. What was more reasonable than to assume that water ingested with meals would dilute the gastric juice and thus diminish its proteolytic efficiency? And what was more logical than to urge the abolition of such an assumedly harmful custom of water drinking? Yet investigation has showed that some of the postulates in this contention are wrong, and that unsuspected factors further vitiate the conclusions. Indeed, under certain conditions water may even promote the gastric secretion, and thus upset these revered traditions.

The proper mastication of food has certain obvious justifications. It promotes a more extensive insalivation, which is not without advantage to certain types of foodstuffs, and it permits a speedier admixture of the alimentary digestive secretions with the individual comminuted food particles. Enthusiasts have not been content with the insistence on these indisputable advantages, but have attempted to infuse far-reaching effects into the habit of very complete mastication. We may be ready to admit that insufficient mastication is the cause of direct or indirect evils which may be greatly exaggerated in certain pathologic conditions. When, however, we are urged to chew our food with unremitting vigor because it "secures proper insalivation of food, increases the quantity of alkaline saliva passing into the stomach, stimulates the heart and circulation, influences the nutrition of the jaws and their appendages by stimulating blood and lymph circulation, and, finally, tends to diminish the amount of food consumed because it is more economically disposed of in the system," one may well pause to make a few related inquiries. Where is the borderline between "truth and poetry" in these matters?

The two extremes of practice are doubtless represented by under mastication, as involved in the hasty bolting of food, and overmastication, to which the epithet "fletcherizing" is sometimes applied. Foster and Hawk have completed studies of the utilization of typical protein as influenced by different degrees of mastication. The principal protein constituent of the diet was cooked beef in the form of 15-millimeter cubes. It happened that protein utilization was most complete as the result of

good mastication, and least complete when bolting was practiced. The output of fecal nitrogen was highest during the food bolting, and macroscopic meat residues appeared in every stool under such conditions. Yet the discrepancies in the protein utilization during these extremes of mastication averaged only 1.6 per cent.

Such insignificant differences surely cannot be used in support of any enthusiastic claims for the alleged marvelous efficiency of the excessive mastication of food, even when judged by the other extreme of food bolting. In another recently published series of experiments on man in which vegetable products, notably potatoes and cereal breads, formed the prominent articles of diet, utilization was apparently improved by good mastication. Neither these nor the earlier quoted results are to be taken as an appeal for complete indifference in the matter of eating, but rather as an indication of the rationality of that happy medium of performance in mastication which is usually a sign of physiologic wisdom in other functions.—*Journal American Medical Association.*

INFLUENCE OF HYPOPHYSIS ON SECRETION OF SALIVA

In the experiments conducted by Solem and Lommen pituitary extract invariably caused a diminution in flow of blood and saliva from the submaxillary gland, as shown from results obtained from thirty dogs and one cat. The decrease in flow of saliva was greater than the accompanying decrease in blood flow. The slowing of blood was less marked if the injection was made during faradization of the chorda tympani than during pilocarpin stimulation, while the slowing of saliva was the same. Pilocarpin was relatively ineffective even when injected seven or eight minutes after pituitary extract. While epinephrin normally caused a vasodilatation of the gland and increase in salivary secretion, epinephrin during the action of pituitary extract had the normal effect on the blood flow but caused a diminution in salivary flow, probably due to the greater quantity of pituitary extract coming in contact with the gland. When pituitary extract was injected during the action of chrysotoxin, the decrease in the flow of saliva set in before the vasoconstriction in the gland occurred. In five out of seven cases, the flow of saliva slowed while there was active vasodilatation in the gland. From these results the authors conclude that the decrease in flow of saliva following the injection of pituitary extract is due to inhibition of the action of the secretory nerves to the submaxillary gland, but also due in part to the accompanying vasoconstriction, which is caused by direct action on the muscles of the arterioles or the effect on the peripheral endings of the

vasomotor nerves, but more probably to the effect on both. The decrease in output of blood from the gland may be also due to the decreased activity of the gland.

VINCENT'S ANGINA

By Dr. B. N. Colver, Battle Creek, Mich.

A large number of cases of Vincent's angina go undiagnosed. It is not a common disease. It may occur epidemically in children's hospitals, but outside of hospitals it is more frequent in young adults. It usually appears in children suffering from some form of malnutrition. It follows or complicates some cases of measles, scarlet fever, whooping cough, and diphtheria. In adults, as in children, any lowering of general vital resistance is a predisposing factor. Unsanitary environment, faulty personal hygiene and local lesions of the tonsils, gums, or buccal mucosa invite the infection. Differential diagnosis must be made with syphilis, diphtheria, streptococcal angina, and other intense infections resulting in ulceration and pseudomembranous formation. In making the diagnosis, one must resort to the study of fresh smears, cultures and the Wassermann test. As regards prognosis, children fare less well than adults. Cases of mixed infection are the least favorable. Treatment should be supportive and eliminative. In hospitals, isolation should be enforced; in families, the usual prophylactic measures. During the past year we have seen seven cases. Two were of the extratonsillar type; one was associated with syphilis, and in another there was apparently a concurrent infection with the Klebs-Loeffler bacillus and the *Bacillus fusiformis* and spirillum. The other three cases showed the possibilities of contagion and the advantage of early diagnosis and prompt therapeutic action.—*British Medical Journal, September, 1915.*

USE OF CERTAIN ANTISEPTIC SUBSTANCES

The principle of the preparation advocated by Dakin is as follows: Chlorid of lime (bleaching powder) is decomposed with a solution of sodium carbonate and the filtered solution containing sodium hypochlorite together with a slight excess of alkali is mixed with boric acid in such quantity that the solution is acid to phenolphthalein suspended in water but still alkaline to litmus. The resultant solution contains a balanced mixture of hypochlorite and polyborates of sodium with small amounts of free hypochlorous and boric acids. Thus the irritating action of free caustic alkali is avoided, for even if momentarily formed it would be at once neutralized by the boric acid or acid borates present in the solution.

The preparation of a solution of suitable concentration for direct application, containing 0.5 to 0.6 per cent. of sodium hypochlorite is carried out as follows: One hundred and forty gm. of dry sodium carbonate (Na_2C_3), or 400 gm. of the crystallized salt (washing soda), is dissolved in 10 liters of tap water, and 200 gm. of chlorid of lime (chlorinated lime) of good quality is added. The mixture is well shaken, and, after half an hour, the clear liquid is siphoned off from the precipitate of calcium carbonate and filtered through a plug of cotton; 40 gm. of boric acid are added to the clear filtrate, and the resulting solution is ready for use. A slight additional precipitate of calcium salts may slowly occur, but it is of no significance. The solution should not be kept longer than one week. The boric acid must not be added to the mixture before filtering, but afterward.

A stronger solution may be prepared by decomposing chlorid of lime with sodium carbonate in the proportion of 150 gm. of the former to 105 gm. of the latter dissolved in a liter of water. The mixture is filtered and a measured portion of it (20 c.c.) is rapidly titrated with a boric acid solution of known strength (31 gm. per liter), using phenolphthalein suspended in water as indicator, in order to determine the amount of solid boric acid to be added to the rest of the filtrate. An excess of boric acid should be avoided.

—*Journal American Medical Association* (*British Medical Journal*).

PNEUMOCOCCIC ARTHRITIS

J. W. Sever reports a series of six cases representing various methods of infection by the pneumococcus, namely: (1) From the mouth by way of a tooth infection. (2) By trauma without previous known pneumonia. (3) By a previous pneumonia followed by an otitis media. (4) By trauma followed by pneumonia and involvement of the joint in nine days. (5) Following several attacks of bronchopneumonia and immediately after an acute attack of otitis media. (6) Involvement of joint two weeks after an acute attack of lobar pneumonia. This case represents the only typical one. All these cases had the diagnosis confirmed bacteriologically except Case 4, which, however, is included in this series on account of the improbability of its being anything else. The fluid in all these cases was rather thin and greenish yellow when the joint was first opened, but as it continued to drain at the time of the operation the heavier pus escaped. It was during this period that the fibrin flakes were expressed. The mortality was three out of six cases, 50 per cent. The joints, so far as the author has been able to determine, are practically normal in the two cases he has been able to follow.

—*Boston Medical Journal* (*Medical Record*).

AN EPITOME OF CURRENT DENTAL AND MEDICAL LITERATURE

[*Texas Dental Journal*, October, 1915]

Original Communications

*Border Line Cases that Deeply Concern Dentists and General Surgeons. Thirty-Fifth Annual Convention of the Texas State Dental Association.

Editorial Notes

"We Are One in Education and Training, etc."
West Texas Dental Society.
September Meeting of Waco Dental Society.
September Meeting of Dallas Dental Society.
September Meeting of Dallas County Dental Society.

BORDER LINE CASES THAT DEEPLY CONCERN DENTISTS AND GENERAL SURGEONS*

By James E. Thompson, M.B., B.S., London, F. R. C. S., England; Professor of Surgery in the University of Texas Medical School, Galveston, Texas

In the treatment of fractures and the surgery of bones mechanical skill becomes a necessity, and I am sorry to say that in this branch of surgery many surgeons of great reputation are very deficient.

Formerly, a very important branch of a surgeon's practice, the surgery of fractures, forms at present an insignificant proportion of cases treated in many large clinics. The result of this want of experience is that the mechanical dexterity of groups of surgeons remains undeveloped along these lines. Of course there are exceptions, of which Murphy's clinic is an example; but the fact remains that the standard of mechanical ability is not as high as it ought to be.

My grievance against surgeons is that as a class they have not developed their mechanical dexterity to a sufficiently high plane, and I have no hesitation in stating that the result in an ordinary case of fracture of the lower jaw will not be a perfect one if the treatment is carried out by a surgeon, without the coöperation of a dentist. Success or failure in treating a fracture of the mandible must be measured by one standard only, which is the degree of restoration of the normal articulation of the teeth; and except in very rare instances the result of treatment in the hands of an average surgeon will show a noticeable degree of deformity. The cause of such uniformly poor results is to be sought partly in the deficient training that most surgeons have received in delicate intra-oral operations, and partly in the deficient teaching of the average text-books. It would appear that such an important and com-

*(Presented at Meeting of the Texas State Dental Association, Galveston, May, 1915.)

mon injury which is so often attended by permanent deformity ought to be described carefully, but on the contrary, the attention given to it is usually scanty and inadequate, and at times inaccurate. Infinite trouble is taken in teaching the future surgeon how to perform major operations on the long bones which the average man will never be called on to do, but scant information is given how to prevent deformity in one of the commonest of fractures.

The responsibility of the dentist is not limited to the teeth. It extends to the jaws, gums, mouth, and face. At present the educational privileges of a dentist are as broad as those of a surgeon and he ought to be able to recognize with accuracy any deviation from the normal in the cavity of the mouth. Many dentists have become the most skilled amongst our oral surgeons. The whole cavity of the mouth is yours if you lay claim to it. But no spurious claim will be allowed. It must be founded on a knowledge of anatomy and pathology which is within the grasp of everybody.

There are many affections now claimed by general surgeons which ought to belong to you by right on account of your special skill. Foremost amongst these stands fractures, the treatment of which, by the general surgeon, should be discountenanced, because his methods are puerile and the results disgraceful. On the other hand, the profession of surgery demands that you, on your part, shall not treat epulis for spongy gums and pyorrhoea alveolaris, nor temporize with ulcers of the gums, cheek, and floor of the mouth, but that you shall promptly notify your patient that there is a possibility that they are suffering from a serious surgical disorder, which will prove fatal unless radical treatment is employed.

We are one in education and training, and coöperation must be our watchword.

[*The Dental Summary*, November, 1915]

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Acetylene Flame, the Laboratory Heat Par Excellence. By W. F. Wilson.
Combination Filling of Cement and Amalgam. By George B. Smith.

INDIRECT AND SEMI-INDIRECT METHOD OF INLAY IMPRESSION*
BY DR. N. W. HIATT, MARION, INDIANA

Take the impression with modeling compound. Build moldine around impression for inlay. Place ring on moldine and pour S.S.W. inlay metal into ring. This makes a hard, smooth model. Press inlay wax in impression and carve; remove and try in the tooth and complete carving in the mouth. This is the semi-indirect method.

Indirect method: Impression is taken as above, but model made of inlay investment material. Separate model and compound and melt inlay wax into impression for inlay. Carve and trim away surplus investment material, leaving only that part the wax is in. Invest the wax model and investing material without removing wax from impression.

[*The Pacific Dental Gazette*, October, 1915]

Original Articles

A Few Thoughts on the Comparative Anatomy of the Maxillary Sinus—Its Relation to the Teeth, Infraorbital Canal and Alimentary System (with illustrations). By Cryer.
Organization and Progress of the Dental Corps of the United States Army. By Lieut. G. H. Casady.

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Mandible of the Criminal. By Castellanos.
Formula for Facial Neuralgia.

[*The Dental Cosmos*, November, 1915]

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*Emetin in the Treatment of Peridental Suppurations. By Allen J. Smith, M.D., and M. T. Barrett, D.D.S., M.S.
*The Germicidal Properties of Dental Cements. By Dr. M. R. Smirnow.
A New Method for Indicating Normal and Abnormal Relations of the Teeth to the Facial Lines. (III.) By J. A. W. Van Loon, M.D., D.D.S.
Buckley's Paste as a Desensitizing Agent. By C. S. Van Horn, D.D.S.
*A Few Interesting Cases Met With in Hospital Practice. By Jas. R. Cameron, D.D.S.
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The Oral Specialist's Responsibility in Systemic Infections. By Alexander D. McConachie, D.D.S., M.D.
Control of Children and the Management of Children's Teeth. By Haidee W. Latham, D.D.S.

*Clinic, Indiana State Dental Association, 1915.

EMETIN IN THE TREATMENT OF PERIDENTAL SUPPURATIONS*

By Allen J. Smith, M.D., and M. T. Barrett, D.D.S., M.S., Philadelphia, Pa.

EMETIN HYDROCHLORID, VACCINES, AND MECHANICAL TREATMENT OF PYORRHEA COMPARED

One will, in the end, approve of that plan of the three possibilities as a routine method which is found most readily and comfortably applied, and which in the greatest proportion of cases proves most efficacious. There is no objection to the use of vaccines, properly selected, prepared, and administered, for the destruction of the bacterial end of the chain, but it is well known that vaccine therapy in pyorrhea, while occasionally followed by brilliant success, is more frequently disappointing and by no means free from objectionable features. If emetin be an efficient amœbicide, as has been well proved in our opinion, there is quite as much rationality in attacking the amœbic link in the symbiotic chain; and our own experience, supported by the experience of many others who have used it in appropriate fashion, would indicate that as a single remedial agent this drug is of high value, and is attended by comparatively trifling discomfort or danger to the patient. But if the mechanically prophylactic dentist actually, under whatever theory he operates, carries out in full measure the removal of all the agents which may be involved, and in so doing is within reasonable limits as to discomfort to his patient and danger to the structures involved, we can have no quarrel with him as to the ultimate results. But a thorough cleansing is so difficult that imperfectness is more than likely to attend the best intended efforts, and there is no operation of the dental office that is ordinarily more dreaded by the sensitive patient than this; moreover, the damage done to the structures, the chance of opening ports of infection to persisting oral micro-organisms, and the occasional effects of fuller absorption of toxic substances not evacuated from the lesions, all make this, to say the least, a mode of procedure not to be chosen as the primary and sole measure for the average case. It would be foolish to deny value to any one of these three modes, or to the use of ordinary antiseptics frequently combined with mechanical measures; but the writers believe that in proposing the use of emetin they have contributed a remedy which, when employed in those cases in which amœbæ are demonstrable in the lesions, should rank as first choice, because of its real value and because of its lack of

*(Read before the Susquehanna Dental Association of Pennsylvania, at its annual meeting, Wilkes-Barre, May 18, 1915.)

seriously objectionable features. We cannot and we do not object to the use of vaccines if they really represent the important ones of the vegetable organisms of the lesion, but we believe they are best used after emetin has been employed, and has not at all or but imperfectly stopped the suppuration. In similar circumstances ordinary antiseptics may well find a place as an adjuvant in the treatment of pyorrhea. As for instrumentation, holding to the extreme importance of mechanical rest for loosened teeth and of avoidance of instrumental harm to the diseased peridental tissues, and requiring of the operator that he proceed with caution for these points, there can be no fault found with rational operative measures.

THE GERMICIDAL PROPERTIES OF DENTAL CEMENTS*

By Dr. M. R. Smirnow, New Haven, Conn.

CONCLUSION

The experiments, taken as a whole, indicate that there are grades of germicidal efficiency in the cements tested. It appears also that the cements investigated can be divided into two classes, the first composed of those containing red and black copper oxid, which for the sake of clearness may be regarded as class "A," and the second, those of lighter color, so-called copper cements and the ordinary oxyphosphate cement, which may be designated as class "B."

The germicidal efficiency of each of the cements depends considerably on the mixing fluid or some readily soluble substance. This statement is emphasized by the experiments in which either the cement pellet or the filled teeth were subjected to washing in alkaline solution. Under these tests, red copper oxid cement II excelled all others, including cement I, of its own class, showing evidence of but 3 failures in 25 teeth tested, as compared to 11 out of 25 by the black oxid cement I, its nearest competitor. It is not necessary to draw further comparison between the various cements, since that has been already done in considering each series of experiments.

It appears to the writer that the germicidal action of dental cements, when in actual use, depends on numerous conditions other than the absolute germicidal coefficient of the cements *per se*. It has already been pointed out that the cement pellet may act, in part, as a germicide simply through its mechanical effects. There is no doubt that careful and proper dental technique, that tends to attain as perfect asepsis as possible, will enhance the total results obtained by the dentist. The same may be said concerning the shape and size of the cavity to be filled, the method

*(Read before the Connecticut State Dental Association, at its annual meeting, Hartford, April 21, 1915.)

and manner of filling, etc., it being essential that the filling shall not permit the entrance of bacteria along its margins or through its substance.

The porosity of these cements, their possible expansion or contraction, and other properties of cementation, taken with their particular chemical composition, have undoubtedly some influence on their germicidal efficiency. These matters, both physical and chemical, have already been investigated and reported by numerous individuals interested in the chemistry and actions of cements, and are entirely beyond the scope of this paper.

With all things equal, there can be no doubt that the cement that shows the greater amount of germicidal action in laboratory tests such as are sufficiently severe, may be regarded as the one that would give the best germicidal results when in actual use.

FEW INTERESTING CASES MET WITH IN HOSPITAL PRACTICE

By James R. Cameron, D.D.S., Philadelphia, Pa.

The graduate from the modern dental school has opportunities which his predecessor of a few years ago did not enjoy. Many of our largest hospitals and institutions that care for deformed individuals are appointing dental surgeons to their staffs.

It is only a matter of time, possibly of a few years, when all large hospitals in this country will open their doors to the dental intern. He will be as much a part of a large hospital as is the medical intern at present. The appointing of dental interns to general hospitals is one of the ways in which the dental profession can answer Dr. Mayo's query: "Will the dentists take the next great step in preventive medicine?"

The medical man who is well versed in his work is alive to the important place that dental surgery can play in general medicine and surgery. He has come to realize that many systemic disorders have their origin in the oral cavity, and he will look to the dental profession for aid in eradicating such diseases. It is therefore the duty of every practicing dentist to be fully awake, and to grasp all the knowledge he can of general medicine, so as to be able to coöperate intelligently with the physician.

LACK OF PATHOLOGICAL KNOWLEDGE AND OF APPRECIATION OF ASEPSIS AMONG DENTISTS

The lack of pathological knowledge and of the practice of asepsis in many dental practices is appalling. One of the best-known surgeons in the city of Philadelphia, a man of international reputation, in speaking before the clinical society of this hospital, said: "The dentists as a class know very little about acute infections of the oral cavity, and less about

asepsis." Some of the cases reported in this article will serve to furnish a justification of that statement.

The recent graduate in dentistry has as much to gain by taking an internship as has the medical graduate. To a large percentage of dental practitioners this will appear a rash statement, because their horizon of practice does not extend beyond the insertion of fillings, making plates, and apologizing to the science of extracting. The man who cannot make a reasonably correct diagnosis of a malignant condition in the oral cavity or associate parts is indeed a very poor representative of modern dental surgery. He will never command the respect of his brother the general surgeon. What a broad field presents itself to the everyday practitioner of dentistry to combat malignancy! Instead of waiting to see whether a condition will become malignant, it should be eradicated while in the early stages. Many practitioners of dentistry boast that they never sterilize their instruments, and that they have never had an infection in all their years of experience. It would be of interest to know just how many people have been inoculated with syphilis by this class of practitioners. This is not an extreme theory, but a statement of cold facts, for cases have reported to this and other hospitals, suffering from syphilis, all evidences pointing toward the dentist as the disseminator.

A young man in the prime of life called at a dentist's office to have a tooth extracted. Four days afterward he died from Ludwig's angina. Is it necessary to sterilize extracting forceps?! Practitioners who do not practice sterilization in the fullest meaning of the word are criminals; they are disseminators of disease, and therefore a menace to public welfare.

Baldwin of Chicago reports nine cases of syphilis contracted during dental operations, in two of which cases dentists themselves became infected through carelessness. Farther on in this article a case of syphilis contracted after extraction of a tooth will be recorded. Medical men are constantly berating the dental practitioner for his methods of treating alveolar abscesses. Why is it that so many dental practitioners refuse radical treatment of an acute alveolar abscess, which is undoubtedly a condition calling for surgical interference? When the surgeon decides that there is pus in a patient's abdomen, he does not hesitate to open into the abdominal cavity to remove the pus.

[*The Dental Review*, November, 1915]

ACUTE ULCEROUS GINGIVITIS

This disease first described by Dr. Thomas L. Gilmer in the *Dental Review* of May, 1906, seems to be somewhat on the increase. At the

time Dr. Gilmer wrote he made the statement that it was "seen but rarely," and in a relative sense this may still hold true, but it would seem in recent years to be more common than formerly. Up to the time of Dr. Gilmer's article the present writer recalls having seen only two, or possibly three, cases—the third having been so mild as not to be wholly typical—but within the past year four cases have come under his notice.

To quote briefly from Dr. Gilmer's article: "The onset of the disease is sudden, the earliest symptoms indicated by a slight malaise which is quickly followed by rapid ulceration, at first confined to the gingivae, usually about two or three of the anterior teeth on both jaws simultaneously and in corresponding localities; later it is extended to the gums about a number of the teeth, or groups of teeth, but rarely if ever does it include the entire gum margin."

In some cases the ulceration is quite severe, and the gums are excessively sensitive. For treatment Dr. Gilmer recommends antiseptic mouth washes such as warm boric acid solution, a cleansing of the surfaces with 3 per cent. pyrozone followed by the application of compound tincture benzoin. As a constitutional treatment he suggests four tablets of mercurous chlorid, 4/20 grain each, three times daily and a cathartic on rising.

DISEASED TISSUES OF THE ORAL CAVITY

By W. C. Smith, D.D.S., St. Louis

Recapitulation: It was necessary to investigate the pathological changes that take place in syphilitic affections before their manifestations could be comprehended or recognized when seen. If the nature of the syphilides are not learned, the dentist will not be able to understand their import when he meets them in practice, but it will be the oral manifestation or phenomena that will chiefly concern him. And hence these should be awarded special attention, because of the possibilities of the transmission of the disease through his instrumentality.

The practitioner has already been cautioned about jumping to the conclusion that every mucous patch in the mouth or every indurated sore has a specific origin. Any excoriation of the mucous surface may be greatly aggravated by special irritants that are common in the mouth. The chewing and smoking of tobacco, the holding of pipes, cigars, and cigar holders, the drinking of hot and iced fluids, may intensify local irritation until it assumes a very suspicious aspect. In the same manner syphilitic sores in the mouth may take upon themselves an irritated character or appearance; but it should be borne in mind that these aggravations do not in essence differ from the same morbific changes occurring in other parts of the body.

Chancres occurring upon the tongue or oral cavity, although somewhat modified by surroundings, present the same characteristics as when they appear elsewhere. Rough and carious teeth may aggravate them and modify their appearance, but they will not destroy their leading characteristics. As a rule, the lesions of the mouth are of a moist rather than a dry nature, and usually assume the form of mucous patches. In the early stages of secondary syphilis, the eruptions may appear in the mouth as well defined areas of a dark red color upon the soft palate, tongue, pillars of the fauces, and along the gingival labial borders, and will vary in size from mere points to blotches covering the whole surface. The papular syphilide of the cutaneous surfaces is represented in the mouth by patches of moist papules. The ulcerative lesions are usually the further breaking down of the mucous patches or gumma, and their deep erosions, until they form considerable caverns in the tissues, which are very painful. They may follow along the line of the tongue or they may burrow into the crypts of the tonsil, or form circular pits on the posterior wall of the pharynx.

An acute glossitis, or inflammation of the tongue, is not infrequently the result of syphilitic infection. Along the borders of the tongue dry or squamous lesions sometimes may be seen. They are not moistened by the usual secretions of the mouth, and in color are of a grayish or bluish white, sometimes having a glistening appearance. These patches are especially marked among users of tobacco, especially smokers, and are sometimes called "Smoker's patches," and are not always confined to the tongue itself, but may appear anywhere in the mouth.

Gummata of the mouth may develop in later stages of syphilis and give the characteristic "Toad's back" appearance. The syphilides of the mouth may assume a variety of forms, and sometimes their diagnosis is impossible except with the aid of their clinical history of syphilitic infection. They may possibly be mistaken for other infections. The roseola may be confounded with a follicular stomatitis, and the ulcers with cancrum oris or noma. Mercurialization may usually be distinguished from syphilitic disturbances by the fetor of the breath and distinct metallic taste.

The only safe course is to group the various symptoms, examine for glandular induration, and carefully and delicately inquire into the history of the case, when suspicious appearances are found in the mouth, all the time observing caution to guard against possible infection. For if there happens to be, as is frequently the case, any abraded or wounded point in the fingers, it is possible for syphilitic incubation to take place from secreting mouth plaques.

My final plea to the dentist is, that when patients present themselves for services, that he make a thorough and careful examination for lesions of the soft tissues as well as tooth structures, that might be of an infectious nature, thereby protecting himself as well as succeeding patients from any infection.

[*Items of Interest*, November, 1915]

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[*The International Journal of Orthodontia*, October, 1915]

Original Articles

THE DEVELOPMENT OF THE HEAD

By F. Hecker, D.D.S., Kansas City, Mo.

The time of ossification of the bones of the cranium of the human foetus is as follows:

(a) The nasals commence to ossify about the eighth week of foetal life.

(b) The frontals commence to ossify from two centres which appear about the seventh week. At birth the point of union of these bones is very distinct; as development progresses the suture is almost obliterated. About the first year the two bones are firmly united into one piece.

(c) The parietals are ossified from centres which appear in the site of the parietal eminence about the seventh week. It is this eminence that causes the odd shape of the head so often seen. In some cases this odd shape of the head persists for a number of years after birth.

(d) The interparietals are represented by the upper pair of centres of the occipital region; these centres appear in the seventh in the mesenchyma overlying the supra-occipital. In some cases these bones have been found independent of the occipital.

(e) The squamosals are each ossified from a single centre which appears in its lower part about the seventh week, ossification extends upward and outward to the zygomatic process; at birth the squamosals are still separated from the periotic capsules, but during the first year after birth they unite with the temporal bone.

(f) The vomer is developed from a single centre in its posterior portion beginning about the eighth week; from this centre two lamina are developed which pass up on each side of the median line, and embrace the lower margin of the cartilaginous inner nasal septum. As development progresses these lamina gradually coalesce from behind forward till the age of puberty, thus forming the nasal pit, with the grooves remaining on its superior and anterior margins.

(g) The palatines commence to ossify from a single centre which appears about the seventh or eighth month, between the horizontal and ascending portions.

(h) The pterygoids commerce to ossify from a single centre which appears about the fourth month; during the fifth and sixth months the pterygoid processes are developed, and unite with the pterygoids. It is by this process that the alisphenoids become the internal plates of the pterygoids.

(i) Koelicker was a close observer of the premaxillæ, and according to his researches the premaxillæ ossify later than the maxillæ. He found that they first appear about the time the palatine suture closes. Koelicker emphasizes the fact that they have a very short independent existence. A primitive division of the premaxillæ is still present about the ninth week. In examining the point of union in the tenth week all division is lost.

(j) The maxillæ begin to ossify about the second month from several centres; they rapidly fuse and as a result of this cannot in a strict sense be considered as separate centres. Blanchard is the discoverer of the fact that ossification commenced from several centres. In the description of the premaxillæ it was learned that the premaxillæ and the maxillæ unite about the tenth week.

(k) The mandible is a compound bone in the adult. It includes the dermal bones and the ossified portions of Meckel's cartilage. Most of this cartilage is absorbed in the process of development. At the ends of the coronoid and the condyloid process there is seen a cartilaginous development. In a previous portion of this paper it has been stated that

there are two schools on the question of the development of the mandible. The principal investigations of the first school are the following. Parker writes that in a fœtus 2.5 m.m. in length he has found Meckel's cartilage in the space between the two pieces of the ununited mandible, and he further states that it is the presence of this cartilage that causes these bones to unite. Masquelin writes that in an embryo 5 m.m. in length Meckel's cartilage is entirely surrounded by mesenchymal bone, and that in an embryo 17 c.m. in length only a slight calcareous remains of the cartilage is noted, except in the lower ends of the symphysis. Koelicker reports that he has seen cartilage in embryos measuring 7.5 c.m. in length. He also reports that he has seen Meckel's cartilage along the alveolar process, and that this cartilage undergoes the process of ossification at an early date. Brock's researches are the basis of the second school. According to his researches the mandible is not developed with the rest of the primordeal skull. He wrote that the accessory cartilage of the mandible is morphologically distinct from that of the primordeal skeleton.

(l) The malars, or, as they are sometimes called, the jugals, commence to ossify about the eighth week. According to the researches of Renault, ossification commences from three centres; about the fourth week these centres unite and all lines of union are lost.

(m) The temporals develop from four separate centres which appear about the third month in the external portion of the tympanum, and extend upward until a bony ring is formed that encloses the tympanic membrane. Before birth the open ends unite with the squamosal, and by this union they become incorporated in the temporal bone.

The fontanelles contain open areas at the point of union with the bones with which they unite. At birth they are six in number, two median and posterior, and four lateral. The anterior fontanelle is situated at the anterior-superior angle of the parietal bone; it remains open for some time after birth. The posterior fontanelle is situated between the posterior superior angle of the temporal bone; it also remains open for some time after birth. At birth the bones of the head are very movable. About the first year they become firm in their position, but they are not perfectly united until about the fourth year.

[*Oral Health*, October, 1914]

Photograph, the late Dr. G. V. Black.

*Oral Manifestations of Constitutional and Infectious Disease. By J. Garnett Nelson, M.D., Richmond, Va.

Relieving Pain by Pressure.

Post-graduate Course in Prosthetics.

The Dentist in the Army. By W. Bertrand Amy, D.D.S., Toronto.

ORAL MANIFESTATIONS OF CONSTITUTIONAL AND INFECTIOUS DISEASES

By J. Garnett Nelson, M.D., Richmond, Va.

THE TEETH

Exactly to what extent frail, fragile teeth, or teeth so soft that frequent attention is necessary, are related to constitutional disease is not known. It seems undoubtedly true, however, that there is a very definite relation between the latter condition, that is, the teeth that frequently need attention and nutritional or constitutional disorders, or abnormal conditions of metabolism. Certain alterations in metabolic processes, as in diabetes, chronic nephritis, chronic intestinal disorders, and especially the pregnant state, seem to be contributory factors in rapidly decaying teeth. We have all, of course, observed the frequency with which women in the last weeks of pregnancy, especially, suffer with aching teeth, or abscesses. The only reasonable explanation of this lies in the belief that on account of their peculiar state certain chemical or metabolic changes are going on, which we have no means at present of discovering, but which clearly make them liable to these decaying processes, and diminish their resistance to infections. Accepting this definite relation, we go but one step further when we believe that in all, or practically all, cases of rapidly decaying teeth, or frequent abscesses, or possibly pyorrhoea, disease or altered function of some important organ or organs is to a great extent responsible.

Thinking along this line, I again invite your attention to the pallid membranes of anæmia and the cyanosis of heart or lung disease. In all cases, therefore, of rapidly decaying teeth, or frequent abscesses, or pyorrhoea, the dentist should refer his patient to the family physician, with the idea that some chronic disease of the heart, lungs, liver, kidneys, or digestive tract is quite likely, or, I might say, almost sure to be discovered. There are undoubtedly numbers of these cases whose only hope of an early diagnosis lies in the thoughtful watchfulness of the dentist, just as in incipient tubercular infections, or beginning kidney disease, for example, an early diagnosis depends on the careful routine work of a physician, or is accidentally made by an insurance examiner. The pa-

tient himself, or applicant for insurance, may be entirely unaware of the existence of any serious trouble.

[*British Dental Journal*, October, 1915]

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THE SUPPLY OF DENTISTS: THE EFFECT OF THE WAR

There is a scarcity of dentists at the present time, and it is evident that if municipalities, or, in fact, any public bodies, wish to secure the services of a member of the dental profession they will have to offer better financial inducements than have been the case in the past.

One indication of this has been forthcoming in the experience of one Lancashire local authority, which, after certain statements had been made in explanation of the position, had to make an advance of £50 per annum in the school dentist's salary.

It is evident, from inquiries made in Manchester by an *Evening Chronicle* representative, that a decided fillip has been given to the dental profession by the added importance which the Army and other authorities now attach to the care of the teeth.

"After a long time we are undoubtedly coming into our own," said one dentist to our representative.

"Up to recently we have not been paid in accordance with the amount of training which is necessary before one can become a fully qualified dentist. The training period is only one year shorter than that of those who enter the medical profession, and it costs practically as much, but the remuneration is by no means on the same scale.

"There may have been a few dentists employed by the authorities toward the close of the South African War, but I believe that this is the first campaign in which the War Office have displayed a real interest in the importance of the work of the dentist so far as the soldiers are con-

cerned. It is worthy of note that dentists are coming over with the Colonial forces.

"Prominence has already been given in your journals to the great amount of work which has been accomplished in the Manchester Dental Hospital on behalf of the soldiers, who, by the way, must have two 'grinding molars' on each side—whether real or artificial—and since the demands on that institution have been relieved by the formation of dentistry panels the work has continued to progress satisfactorily."

It was significant that, as in many other professions and trades, women were making their presence felt more than had hitherto been the case.

"Dentists," he said, "now have competition from the gentler sex, and I understand that some time ago two ladies became qualified at the Manchester Dental Hospital to which I have referred."—*Manchester Evening Chronicle*, September 4.

THE CITY CORONER ON DENTAL NEEDS OF THE POOR

Some comments of dental interest were made by the City Coroner (Dr. F. J. Waldo) at an inquest held by him on September 14th at the Southwark Court, on Joseph Hill (61). While eating a plate of cold beef at Lockhart's, the deceased suddenly fell to the ground in a choking fit and died on his way to Guy's Hospital. The autopsy disclosed a piece of beef 3 inches long in his larynx and another unmasticated portion in his stomach. The remains of two teeth only were found in his mouth, on opposite sides.

In summing up the Coroner said that about two years ago he held an inquest in the same district on a man with the remains of two teeth, who had been an inveterate sufferer from dyspepsia for years, and who was practically starved. His relations said he was too poor to obtain artificial teeth, but he had been treated at numerous hospitals with advice as to diet and given, without effect, an unlimited supply of physic. The house physician said there was no fund at Guy's or other hospitals for the supply of artificial teeth to deserving out-patients, although in-patients were often assisted in cases where trusses, false legs and arms and spectacles were needed. The Coroner then pointed out the many dangers due to the want of teeth (natural or false), such as dyspepsia (the commonest of all complaints), sepsis of the mouth leading to blood-poisoning and all manner of very serious and ill-understood maladies, malnutrition and wasting, sleeplessness, melancholia, and even, in some cases he had reason to suspect, suicide. The most important function of teeth was mastication, by which food was comminuted and at the same time insalivated—two essential preliminaries to digestion. The restoration of mastication

by means of artificial teeth led often to the immediate cure of imperfect digestion, which diet and drugs had failed to influence. Want of teeth frequently led to malnutrition and choking.

A good report of this case in the papers caught the eye of Mr. Edwin Tate, who was struck with the fact that hitherto little had been done upon an organized basis for the out-patient in the supply of artificial teeth. Mr. Tate most generously offered £5,000 in trust to St. Bartholomew's Hospital, and a scheme for the administration of the fund was quickly approved by the Charity Commissioners.

In the case of choking then before the Jury, he (the Coroner) hoped some good Samaritan, seeing a report of the case, might follow the good example of Mr. Tate and lay the basis of a fund for Guy's similar to that enjoyed by St. Bartholomew's. Such practical philanthropy was, he thought, likely to effect more good than the offering of money wherewith to found free libraries and other similar luxuries.

[*Journal American Medical Association*, October 2, 1915]

A NEW DISINFECTANT

It is stated that a new disinfectant has been discovered by workers in the laboratory of the Public Health Service in Washington. The *Bulletin* of the P. H. Service describes the substance as follows: "The new preparation is derived from pine oil, a by-product in the manufacture of turpentine. It is easily prepared by mixing certain proportions of the oil with rosin and sodium hydroxide solution, the finished product being a reddish brown liquid, rather thick and oily in appearance, but free from turbidity. With water it makes a perfectly white emulsion, much resembling milk. It has a pleasing odor, no objectionable taste and attacks neither fabrics nor metals. It possesses over four times the disinfectant properties of carbolic acid and is almost non-toxic, so that it may safely be used as a throat spray or mouth wash in solutions of the ordinary strength. The cost of the preparation is remarkably low, as it can be manufactured for less than 50 cents a gallon, solely from products of this country."

[*Journal American Medical Association*, October 16, 1915]

FOCAL INFECTIONS

Dr. N. T. Yager, Louisville: In all cases of obscure systemic derangement, a thorough examination of the oral cavity should be made by a competent dentist and roentgenograms taken of every tooth. One should not take the patient's word for the condition of his teeth and mouth. Many teeth are extracted for apical abscesses from which the

patient has experienced no local inconvenience. More attention should be paid to physical diagnosis and bacteriology by the dentist and coöperation of the medical and dental professions.

DISCUSSION

Dr. M. L. Ravitch, Louisville: The teeth sometimes play an important part in infections. I recall a case in which the jaw was affected, and the disease was diagnosed as cancer. At my suggestion certain teeth were extracted, and after the use of mild antiseptics, healing took place and very little scar was left. It was not a case of cancer at all but a condition brought about by diseased teeth.

Dr. John J. Moren, Louisville: At one time I began to suffer with pain in my joints and hands, so that shaking hands was absolutely painful to me. I had a lower molar tooth which was hurting me a great deal. I went to a dentist for the purpose of having it extracted, if necessary, but he refused to extract it because he wanted to save it. I decided to take the initiative myself. I had a roentgenogram made, and it showed an abscess in two roots. The tooth was removed, and within two weeks I had practically no pain either in my joints or in my hands. I did not take any medicine.

Dr. Michael Casper, Louisville: It is a common occurrence for patients to have unerupted teeth. A great many cases of facial neuralgia and of headache, especially lateral headache, can be explained on the ground of unerupted teeth which are not discovered until roentgenography is resorted to.

Dr. C. E. Purcell, Paducah: A few years ago a young woman came under my care who had intolerable pain over the side of her face. Her condition had been diagnosed as tic douloureux, and she was advised by a surgeon to have the ganglion resected. He was about to remove the ganglion, but for some reason or other his time was so occupied that he did not get to do it, and the girl was dismissed from the hospital. She went home, her dentist extracted a molar tooth which was badly decayed, and she recovered.

[*Journal American Medical Association*, October 23, 1915]

GOOD HEALTH COMMERCIALLY CONSIDERED

The final report of the Commission on Industrial Relations, created by Act of Congress in 1912, has just been issued. While the findings and recommendations of this commission on labor conditions, industrial unrest, workmen's compensation, hours of labor, trade unions, and other subjects connected with industrial conditions are of interest, the most important section of the report, from the standpoint of the physician and

the sanitarian, is Section 16 on Industrial Conditions and the Public Health. Condensed into six pages are a number of startling statements for the first time given the authority and endorsement of a government commission. Under the direction of an officer of the Public Health Service, investigations were conducted by the commission which revealed the fact that while much attention has been given of late to accident prevention, yet accidents caused only one seventh as much destitution as does sickness. Each of the thirty-odd million wage earners in the United States loses an average of nine days a year through sickness, at an average cost of two dollars a day. The wage loss from this source is over five hundred million, while the added cost of medical care of at least $180,000,000 increases the total sick bill of the wage earners of the United States to $680,000,000 a year. From 30 to 40 per cent. of cases requiring charitable relief are due to sickness, while sickness among wage earners is primarily the result of poverty, causing insufficient diet, bad housing, inadequate clothing and unfavorable surroundings in the home. According to the commission, the surroundings and place of work and the personal habits of the worker are important but secondary factors. This means that while there should be no diminution in our efforts to secure better conditions in the factory, the office and the workshop, the real solution of the public health problem lies in the improvement of the home.

Quite as important is the classification made by the commission of disease-causing conditions into three general groups: those for which the employer and the character of the occupation are responsible; those for which the public is responsible, and those for which the individual worker and his family are responsible. It has become a truism in public health work that fixing the responsibility definitely and beyond question is half of the battle for better conditions. The commission regards the employer as responsible for occupational diseases, low wages, excessive hours, work methods causing nervous strain and general insanitary conditions. The public is responsible for housing, water supply, food, drugs, and community sanitation. The greatest share of responsibility, however, rests on the individual and, under present conditions, in the opinion of the commission, he is unable to meet this responsibility. The majority of wage earners do not receive sufficient wages to provide for proper living conditions. The present methods of disease prevention and cure are expensive, and sickness is most prevalent among those who are least able to purchase health. The commission does not anticipate any such rapid increase in the wages of all classes of workers as would permit proper living conditions and adequate medical attention, and therefore concludes that new methods of dealing with existing conditions must be adopted, based on the coöperative action of those responsible for these

conditions. A system of sickness insurance is proposed as the most feasible single remedy. The right of the Federal Government to tax industries in a sickness insurance system has been recognized since 1798, when the law taxing registered vessels for the support of the Marine Hospital Service was passed.

An extensive scheme for a federal system of sickness insurance is outlined by the commission providing for a national sickness insurance commission composed of representatives of employers and employees in equal ratio, with the federal commissioner of labor statistics and the surgeon-general of the Public Health Service as ex-officio members. It is interesting and encouraging to note, among the most important recommendations of the commission in this direction, that "correlation of the insurance system with the medical profession, the lack of which has been a serious defect in German and British systems, is absolutely necessary." Any one who has followed the development of industrial insurance abroad will admit that the opposition or at least the half-hearted coöperation of the medical profession, owing to the inequitable system of compensation and to the fact that no consideration was given to the medical profession in framing the various insurance schemes, has been a most important factor in the partial failure of these insurance systems. A trained medical profession is absolutely essential for the successful operation of any industrial insurance plan. The terms on which physicians are asked to assist in the operation of such a system should be fair and such as will enable them to do justice to their responsibilities. This has not been true either in England or in Germany. More than this the physician does not ask. Less than this he should not be expected to accept. The recommendations of the commission on sickness insurance and on the improvement of health conditions among wage earners are worthy of the most careful consideration both by employers and by labor unions.

[*New York Medical Journal*, October 23, 1915]

Hygiea, August 15, 1915

PATHOGENESIS, TREATMENT, AND PROPHYLAXIS OF MERCURIAL STOMATITIS

By Johan Almkvist

In contrast to the old theory that the saliva was the irritant factor in producing stomatitis and the later one that mercury secreted through the mucosa was the cause, various bacteria also playing an essential rôle in the same, the author has through exhaustive and long continued studies arrived at the conclusion that the combined effect of mercury in the blood and local decomposition processes setting free sulphide of hydro-

gen lead to the ulcerative process. The mercury in the blood of the superficial capillaries absorbs the sulphide of hydrogen from decomposing albuminous food particles in the pockets of the gums, forming mercurous sulphide as a granular deposit in the endothelium of the capillaries—these last have been actually demonstrated to stiffen—and the vitiated circulation causes a beginning degeneration in the epidermis, thus making it a suitable medium for the bacteria of the mouth, those especially concerned being Bacillus fusiformis and Spirochæta dentium; the work of destruction now goes on to ulceration. The sites of predilection primarily are the gums, the angle behind the last upper molar, and the tonsils whose crypts and lacunæ offer a nidus analogous to the gingival pockets. Secondarily affected are the tongue, labial mucosa, and the mouth, from attrition and contiguity with a mercurial gingivitis, and the periosteum by extension of the process downward, resulting in loosening of the teeth or even a deep necrotic process, notably around the lower wisdom tooth, one case of which ended fatally by septic absorption. Regeneration would consist in the gradual resorption of the mercurous sulphide deposit in the capillaries, a process which is at times imperfectly accomplished, and this theory would explain the phenomenon of relapses, some of them as late as a year after the original stomatitis. Treatment consists in strong antiseptics such as bichloride and cyanide of mercury and silver nitrate and oxidizing agents such as permanganate and chlorate of potassium and hydrogen peroxide, especially the latter in 21 per cent. strength injected with a curved syringe. Attention to mouth hygiene and careful disinfection of pockets will increase the resistance and the attempt to use in the treatment of syphilis preparations that do not combine with sulphide of hydrogen, one of them being a nucleide of mercury, has met with partial success.

THE DETRIMENTAL ACTION ON THE CENTRAL NERVOUS SYSTEM OF OPERATIONS IN NARCOSIS AND UNDER LOCAL ANESTHESIA

By Ernst Weber

By means of the hand or arm plethysmograph two disturbances of the circulation referable to changes in the central nervous system could be defined. The disturbance of the first kind consisted in a more or less persistent dilation of the peripheral vessels following local muscle movement. The second grade disturbance consisted in a complete reversal of the response of the vasomotor nerves to local muscular exercise. After local anesthesia a reaction of the first grade was observed lasting for one or two days and half of the cases also showed a reaction of the second grade during the first day only. Following chloroform narcosis a

reaction of the first grade persisted for five to seven days and one of the second grade up to six weeks. In the case of the local anesthetic and of chloroform, the reaction of the first grade was referable to the direct toxic action of the drug on the brain and not to nervous shock. In the case of the reactions of the second grade, shock is more probably of some significance, but pure psychic shock cannot produce this reaction and it requires severe and prolonged painful stimuli for its production. Ether narcosis stands in a position midway between local anesthesia and chloroform anesthesia in the damage which ensues to the brain structures.

[*Medical Record*, October 16, 1915]

[*Deutsche Medizinische Wochenschrift*, August 19]

FATAL CASE OF PYORRHEA ALVEOLARIS

Clemm relates the case of a man of 37, civilian, admitted with a so-called gum boil and buccal suppuration. The abscess was incised and H_2O_2 used freely as lotion and dressing. The temperature ran up in a couple of days to 105° F. No other suppurative focus could be located. There was a most foul odor from the mouth. All of the symptoms, however, appeared to abate spontaneously. The cheek, which had swollen greatly, began to return to its normal size, the fever subsided to a remittent type, and the bad breath improved. Three loose back teeth which had literally swum in pus were now extracted from the right lower jaw. At intervals all the remaining teeth in this jaw were also removed, along with bone sequestra. The fever did not subside and eventually became high. The patient was now in a state of marasmus. The lower jaw continued to slough, pus formation increased, and death supervened under the picture of sepsis, with terminal pulmonary lesions. Death was explained by necrosis of the jaw, burrowing of pus and septicopyemia. The intensive implication of the jaw followed an ordinary case of Rigg's disease.

Wet your articulator before knocking off plaster, and you will not bend or break the metal. The plaster can easily be jarred loose. Will S. Kelly, D.D.S., Wilkes-barre, Pa.

SOCIETY NOTES

CALIFORNIA.

The California State Board of Dental Examiners will meet in San Francisco, Cal., December 9, 1915.—C. A. HERRICK, Whitney Bldg., Cal., *Secretary.*

DISTRICT OF COLUMBIA.

The next examination of applicants for license to practise in the District of Columbia, will be held at the George Washington University, Washington, January 3–6, 1916. Applications should be in the hands of the secretary two weeks before the date of the examination. Fee $10.—STARR PARSONS, 1309 L Street, N. W. Washington, *Secretary.*

IOWA.

The annual meeting of the University District of the Iowa State Dental Society will be held at Cedar Rapids, in the Commercial Club Rooms, the afternoon and evening of Monday, December 6, 1915.—L. W. BUTTERFIELD, *Secretary.*

NEW JERSEY.

The next meeting of the State Board of Registration and Examination in Dentistry will be held at the State House, Trenton, N. J., December 6–9, 1915.—JOHN C. FORSYTH, *Secretary.*

NORTH CAROLINA.

The next meeting of the North Carolina State Board of Dental Examiners will be held at Salisbury, N. C., beginning promptly at 9:00 o'clock on Thursday, January 13, 1916. For further information and application blanks address the Secretary, F. L. HUNT, Asheville, N. C.

OHIO.

The next meeting of the Ohio State Dental Society will be held at Columbus, Ohio, December 7–10, 1915.—F. R. CHAPMAN, 30 Shultz Bldg., Columbus, O., *Secretary.*

PENNSYLVANIA.

The Pennsylvania State Board of Dental Examiners will meet at Musical Fund Hall, Philadelphia, Pa., and at the University of Pittsburgh, Pittsburgh, Pa., December 15-18, 1915.—ALEXANDER H. REYNOLDS, 4630 Chester Ave., Philadelphia, Pa., *Secretary.*

SOUTH DAKOTA.

The South Dakota State Boad of Dental Examiners will hold its next meeting at Sioux Falls, So. Dak., January 11, 1916 at 9 A. M. sharp, continuing three days. All applications must be in the hands of the Secretary by January 1st. Fee $25. ARIS L. REVELL, Lead, So. Dak., *Secretary.*

RUTLAND COUNTY DENTAL SOCIETY

The Rutland County Dental Society held its first meeting of the season Wednesday evening, November 10th, and the following officers were elected for the ensuing year:—

President,	Dr. Thomas Mound, Rutland,
Vice Pres.,	Dr. G. L. Gutterson, Fair Haven,
Secretary,	Dr. Grace L. Bosworth, Rutland,
Treasurer,	Dr. Paul H. Blanchard, Rutland.

IMPORTANT POSTPONEMENT

The meeting of the National Association of Dental Faculties which was to have been held in Minneapolis, January 28-29, 1916, has been postponed to meet in Louisville in July, 1916. The exact dates will be announced later.

B. HOLLY SMITH, Chairman Ex. Com.
N. A. D. F.

EXTENSION LECTURES—NATIONAL MOUTH HYGIENE ASSOCIATION

The Lecture Rental Service inaugurated by this department in May, 1914, has placed our first lecture, designated as lecture "A" "The Care and Use of the Human Mouth," before about half a million people, easily establishing itself as an educational factor of no small importance in connection with the present mouth hygiene campaign.

As less than fifty per cent. of the expense of maintaining the service to date has been met by rental fees and receipts from the sale of outfits and there seems to be no reason why the department should not be self-supporting, both rental and sale rates will be advanced November 1st as follows:—

Rental charge for use of Manuscript and 36 slides, one date, $2.50, (Former rate $1).

Additional charge for day following, $1, (Former rate 50 cts.)

Retention for third and each subsequent day, $.50, (Former rate 25 cts.)

Purchase price advanced from $19.85 to $25, giving purchaser full rights for personal use; giving societies rights for use by their members only.

This advance in rates will enable the department to extend the work in many needed directions and make possible the preparation of other lectures which seem to be needed for special types of audiences.

Application blanks will be furnished by the undersigned.

EDWIN N. KENT, D.M.D.

Director of Extension Lectures, 330 Dartmouth Street, Boston, Mass.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC. OF THE DENTAL DIGEST, OCTOBER 1, 1915, PUBLISHED MONTHLY AT NEW YORK, N. Y., REQUIRED BY THE ACT OF AUGUST 24, 1912

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de Trey & Co., Ltd. is a corporation organized under the laws of England, with authorized capital stock of 500,000 shares of One Pound each, ownership of which is scattered over a considerable part of Europe and includes a long list of names unknown to us, and probably a number of banks and other corporations.

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NONE

THE DENTISTS' SUPPLY COMPANY
JOHN R. SHEPPARD, *Sec'y & Treas.*

Sworn and subscribed before me this 11th day of September, 1915

[SEAL] HERBERT V. DIKE,
Notary Public New York county No. 836
Register's No. 6117

My commission expires March 30, 1916.

STATE DENTAL COLLEGE, DALLAS, TEXAS

At a recent meeting of the Dallas County Dental Society attended by members of the Faculty of the State Dental College, a resolution was unanimously adopted accepting a proposition whereby the management and direction of the College is placed in the hands of an advisory board composed of Dallas members of the county society. This board was named as follows: Drs. Bush Jones, J. W. Halsell, A. L. Frew, S. L. Barron, J. R. Beachum, G. Waller Staples, J. J. Simmons and C. L. Morey.

FUTURE EVENTS

December 6, 1915.—Iowa State Board of Dental Examiners, Iowa City, Iowa.—J. A. WEST, Utica Bldg., Des Moines, Iowa., *Secretary.*

December 6, 1915.—Iowa State Dental Society, Annual Meeting, Cedar Rapids.—L. W. BUTTERFIELD, *Secretary.*

December 6–9, 1915.—New Jersey State Board of Registration and Examination in Dentistry, State House, Trenton, N. J.—JOHN C. FORSYTH, *Secretary.*

December 7–9, 1915.—Ohio State Dental Society, Columbus, O.—F. R. CHAPMAN, *Secretary.*

December 9, 1915.—Examination of applicants to practise dentistry in California, San Francisco, Cal.—C. A. HERRICK, Whitney Bldg., *Secretary.*

December 15–18, 1915.—Pennsylvania Board of Dental Examiners, Musical Fund Hall, Philadelphia, and the University of Pittsburgh, Pittsburgh, Pa.—ALEXANDER H. REYNOLDS, 4630 Chester Ave., Philadelphia, Pa., *Secretary.*

January 3–6, 1916.—Board of Dental Examiners for the District of Columbia, George Washington University, Washington.—STARR PARSONS, 1309 L Street, N. W., *Secretary.*

January 11, 1916.—South Dakota State Board of Dental Examiners, Sioux Falls, So. Dak.—ARIS L. REVELL, Lead, S. D., *Secretary.*

January 10–13, 1916.—Montana State Board Dental Examiners.—G. A. CHEVIGNEY, *Secretary.*

January 13, 1916.—North Carolina State Board of Dental Examiners, Salisbury, N. C.—F. L. HUNT, Asheville, N. C., *Secretary.*

January 25–27, 1916.—American Institute of Dental Teachers, Minneapolis, Minn.—J. F. BIDDLE, *Secretary-Treasurer.*

January 28–29, 1916.—Annual Clinic of the Chicago Dental Society, Hotel La Salle, Chicago, Ill., PERCY B. D. IDLER, 30 No. Michigan Ave., *Secretary.*

February 16–18, 1916.—The tenth annual clinic, Manufacturers' and Dealers' Exhibit of the Marquette University Dental Alumni Association, Milwaukee Auditorium, Milwaukee, Wis.—V. A. SMITH, *Secretary.*

April 14–16, 1916.—West Virginia State Dental Association, Kanawha Hotel, Charleston.

May, 1916.—Indiana State Dental Association, Claypool Hotel, Indianapolis, Ind.—A. R. Ross, *Secretary.*

June, 1916.—Florida State Dental Society, Orlando, Fla.—M. C. IZLAR, *Corres. Secy.*

Dental

A solemn thought comes to my mind;
I put it up to you—
Suppose your eyeteeth all went blind:
How could you see to chew?

The Sun Dial.

To which Dr. H. S. Mustard of Charleston, S. C., rejoins:

Sad thoughts of a sightless mouth
Need not concern us much.
So sensitive is the skin of the teeth,
We could chew our food by touch.

This riddle of blinded teeth is solved,
But we come to another question—
If your stomach teeth their function lost,
Would you have indigestion?

—*New York Sun.*

Assistant Wanted

I want an assistant to take up part of my work now and to carry it on when I am through. He should be about 35 years of age, have had good academic training, be a graduate of a good dental college and must have a natural gift for writing. He must have had enough experience in practice to teach him common sense and how life is lived in the practice of dentistry. He need not have made a marked financial success.

The Duties

He will have to master Dr. Williams' and Professor Gysi's methods and their application to practical prosthesis, and the principles of applied dental economics. It is not essential that he know these things to begin with, but he must have a mind open to direction and instruction.

When capable, he will take up part of the work of conducting this magazine, and will do much of my writing. I want time to undertake some important investigations. This position will not be acceptable to the man afraid of continuous hard work, but if he is the right man, he will have an opportunity to make for himself a very satisfactory position.

The Opportunity

Here is a magazine which has grown great by rendering service. It began the year 1909 with fewer than 1,000 subscribers. The paid subscribers for this issue are more than 20,000.

Its columns are supported, in part, by a group of investigators whose work is changing some of the methods in dentistry and is likely to change more. The reports of their investigations are made through this magazine.

The right man will have his share in perfecting or introducing new methods. He will be taken into this group of workers as soon as he proves worth it. He will be given a chance to do his best.

How to Apply

Write me your name, age, schooling previous to dental college, name of dental college, year of graduation, locations, and times in practice and send copies of your contributions to the literature of the profession, or any other writing you have done, including advertisements. Answer the questions on pages 633 and 634 of the October DIGEST. State what salary you expect.

Continued on next page

Continued from preceding page

Send a photograph, which will be returned. Each communication will be regarded as confidential. Applications should reach me by January 1st.

Do not write unless you are of "good spirit" in the sense that you will not be "sore" if you are not selected. If I knew who is the best man in the country for this position, I should go quietly to him, but I do not. Out of all who may apply, only one can be selected, and many who feel themselves well qualified must be disappointed. Nothing calls out the spirit of good sportsmanship more than work in investigation and introduction, because there are so many postponements and disappointments that the man who gets "sore" is soon eliminated.

Help me find the man I need.

Prizes for the Filling Answers

The October issue offered prizes for the three best answers to questions concerning the cost of making an inlay in the cavity illustrated. I have chosen the answers which seem to me best and have largely given the Business Building Department in this issue over to printing them.

It is curious and serious that out of 40 dentists who took the pains to reply to a plain question of costs, *not one offered a reply to which some serious objection could not be raised.* In other words, not one dentist answered in a manner to suit an intelligent judge in a trial over fees, or to permit himself to be sure of his own remuneration.

If we cannot answer such plain questions how are we to be sure of making livings? How are we to know that we are laying up anything for old age? How are we to quote fees fair to the patients and ourselves? How are we to liberate ourselves from the bondage of poor fees, so that we may be free to render our best service?

What is the use of striving all our lives if we do not know what we are striving for, or whether we are achieving it? What comfort is there in having children if we cannot educate them? How are we to look on old age with anything save fear, if we have made no financial provision for the days when we can no longer earn money enough to live on?

Fortunately the premium book will help dentists who want to be helped, but it will not help those who do not care to take pains. Nor will it help those who want some plan they can work without trouble and have it insure profits. It will show us how to take more pains for certain profits. But there is no way in dentistry to press the button and have somebody else develop the films—and get real pictures.

GEORGE WOOD CLAPP.

CONTENTS FOR DECEMBER, 1915

CONTRIBUTED ARTICLES

BUSINESS BUILDING ARTICLES

OUR COVER THIS MONTH

shows one of the oldtime sailing warships of the United States Navy.

Especial interest is given to these old veterans by the proposition to greatly strengthen the navy as a means of coast defense, and to construct vessels of heretofore unknown size, speed and power. Before modern ships, electrically driven and mounting 14 inch guns, this old sailing ship would be powerless. But in other times these ships bore men as able and brave and witnessed quite as courageous deeds as any that are likely to distinguish the modern vessels.

Do you *care* what dentifrice your patients use?

Many practitioners give much thought to this matter—others think of it only in particular cases—and a comparative few apparently give it no consideration.

For all, however, there is much of vital interest in a study of the functions and effects of

It is a dentifrice and nothing more—its office is the cleaning of the oral cavity. This it accomplishes safely because it is not over-medicated—and successfully, as is abundantly proved by the thousands of letters we have received from practicing dentists who observe its beneficial results.

Some dentifrices make extravagant curative claims. The sober judgment of the profession commends our common sense in keeping clear the distinction between the object of a dentifrice and that of a therapeutic prescription.

For those of the profession who prefer a dentifrice in powder form—Colgate's Antiseptic Dental Powder is equally to be commended. Rince Bouche is a most refreshing mouth wash.

On request accompanied by your professional card we will send a complimentary copy of "Architects of American Dentistry"—an interesting book for your reception-room table. Mention if you also desire a supply of Colgate's Ribbon Dental Cream.

COLGATE & CO.
Established 1806

Dept. 21 **199 Fulton Street** **New York**

Normal saliva is the mouth-bath and mouth-wash which nature provides for the protection of the teeth and gums. The habitual employment of alkaline dentifrices, the action of which interferes with the production or quality of this important fluid, is a procedure detrimental to oral health.

LISTERINE

Listerine is an efficient, non-poisonous, unirritating antiseptic solution, especially adapted to the requirements of

DENTAL PRACTICE

To cleanse and deodorize before operating
To wash and purify the mouth after extracting
To treat, antiseptically, diseases of the oral cavity
To prescribe as a detergent, prophylactic mouth-wash

LISTERINE is prescribed by dental practitioners as a mouth-wash for daily use in the care of the teeth, to secure that measure of antiseptic influence which has proven so desirable in combating the acid-forming bacteria of the mouth.

LISTERINE because of its mildly acid reaction and aromatic flavor, stimulates the flow of normal saliva so necessary to the maintenance of a healthy condition of the oral cavity.

LISTERINE should be used as a mouth-wash after employing frictional chalk dentifrices, to neutralize the depressing effect exercised upon the salivary glands by these alkaline or antacid substances, and to effectually remove from the mouth all particles of these insoluble and irritating materials.

LISTERINE leaflet, upon the teeth and their care, suitable for distribution to patients—emphasizing the importance of frequent consultation with the dentist—supplied with dentist's card imprinted on cover in lots of 200 copies upon request.

LAMBERT PHARMACAL COMPANY

2101 Locust Street **St. Louis, Mo.**

REPRODUCTION OF NATURAL DENTURES

WITH

TRUBYTE TEETH

What more can be asked of artificial teeth than to present such forms, sizes and colors that good natural dentures can be reproduced with them?

Trubyte teeth present such forms, sizes and colors.

If artificial teeth harmonious in form with a face are like the **natural** teeth which critics regard as finest for that face, is it not proof that nature's plan for securing harmony in faces and teeth has been successfully applied in artificial teeth?

Trubyte teeth faciliate the reproduction of the most harmonious natural dentures.

The illustrations on pages 4, 6, 8, and 10, show natural dentures in which the teeth are harmonious in form with the faces. Opposite each of these is an illustration showing how the person would look if the natural teeth were lost and replaced with Trubyte dentures. Only by careful examination can the Trubyte dentures be distinguished from the natural.

Trubyte dentures present the opportunity of a lifetime to educate intelligent patients to appreciation of professional denture service at professional fees.

Trubyte teeth are made only by the Dentists' Supply Company of New York, and may be had of leading dealers everywhere. They are sold in Europe under the name "Anatoform Teeth."

(Continued on next page)

A Strong Tapering Face with Harmonious Natural Teeth

The teeth are illustrated in the incising bite to better show the forms. Note the strong tapering character in the upper centrals and lower incisors.

See the reproduction of this natural denture with Trubyte teeth, on opposite page.

(Continued on next page)

Reproduction of the Natural Denture on the Opposite Page, with Trubyte Teeth, Mould 1N

The character, as expressed in the upper centrals and lower incisors, is identical with that in the natural teeth.

Trubyte teeth are the only artificial teeth to adequately present this strong, tapering form, which is needed for many faces.

The moulds in this form are 1M, 1N, 1P, 1R.

(Continued on next page)

A Tapering Face of the Fifth Modification with a Good Natural Denture

The lines at the sides of this face, when in repose, are not quite as straight as in the face shown on pages 4 and 5 and the teeth are slightly more rounding in character than in the severe form.

They are here shown in the incising bite. See the reproduction of this denture in Trubyte teeth, on the opposite page.

(Continued on next page)

Reproduction of the Natural Denture on the Opposite Page, with Trubyte Tapering Teeth

Trubyte teeth of the proper form have been arranged as in the natural denture shown opposite, except that they are shown in central occlusion and the irregularities of the lower bicuspids have been corrected.

The sizes of this form are moulds 5M—5N—5P—5R.

(Continued on next page)

A Tapering Face of the Fifth Modification

The natural incisors are much worn and show erosion and cracks discolored by stains. The teeth are shown in the position of central occlusion.

Faces of this form and requiring teeth like those shown here are more numerous than any other modification of the tapering type.

See the reproduction of this denture with Trubyte teeth, on the opposite page.

(*Continued on next page*)

Reproduction of the Natural Denture on the Opposite Page, with Trubyte Teeth, Mould 5N

If this person were to lose her natural teeth and Trubyte teeth were arranged as the natural teeth were, she would appear as here shown. The incisal edges are slightly ground; otherwise the teeth are unchanged.

The moulds of this Form, 5M, 5N, 5P, 5R, harmonize with many tapering faces.

(Continued on next page)

An Ovoid Face of the Fourth Modification

The natural denture is finely harmonious with the face in repose. The delicate beauty of the upper incisors cannot be adequately shown here.

See reproduction of this denture with Trubyte teeth on the opposite page.

(Continued on next page)

Reproduction of the Natural Denture on the Opposite Page, with Trubyte Mould 4N

The fact that a fine natural denture, harmonious with the face, can be reproduced merely by selection and arrangement of the appropriate Trubyte mould, is evidence that Trubyte teeth are scientifically correct in principle and practical in use.

Only Trubyte dentures reproduce natural dentures.

Denture Service at Moderate Fees

Patients are entitled to the service they will pay for, and, with the exception of charity patients, to nothing more. This is just as true of the patients who require artificial dentures as those who require fillings.

Every artificial denture costs the dentist part of the expense of maintaining his office, and the value of the labor and materials.

What Dentures Cost

The cost of a denture varies with the expense of maintaining the office in which it is made, with the value of the dentist's time, and with the cost of the teeth.

A dentist with an annual practice of $2,500, gross, needs to earn $2.50 for each of 1,000 income hours.

It will take him from 10 to 12 hours to make a set of full upper and lower dentures, from the time he begins the impressions until he inserts the dentures. He needs to receive for such dentures not less than $22.50 and preferably $25 or more, to allow for any necessary adjustments during wear.

If he sends the work to a laboratory, after taking his own impressions and bites, the cost will be different. If he takes the impressions with the mouth open, and has the patient close the jaws into a roll of wax for the bite, it will probably not take more than 45 minutes to complete this work and select the shade of teeth.

(Continued on next page)

Twentieth Century Moulds
for
Short Square Faces

52

Length upper central 8½ mm. Width 6 anteriors, set up, 39 mm.
Width full 14, set up, 94 mm.

42

Length upper central 8½ mm. Width 6 anteriors, set up, 40 mm.
Width full 14, set up, 95 mm.

36

Length upper central 9 mm. Width 6 anteriors, set up, 42 mm.
Width full 14, set up, 102 mm.

21

Length upper central 9½ mm. Width 6 anteriors, set up, 43 mm.
Width full 14, set up, 102 mm.

88

Length upper central 10 mm. Width 6 anteriors, set up, 45 mm.
Width full 14, set up, 106 mm.

48

Length upper central 9⅞ mm. Width 6 anteriors, set up, 49 mm.
Width full 14, set up, 110 mm.

(Continued on next page)

If he takes the impressions with the mouth closed and makes the bites well, it will take, on the average, about two hours. The first method will cost him $1.88 for impressions and bites. The second method will cost him $5. In either case he will have to pay for the teeth and for making the plates, say $2 for 1 x 28 Twentieth Century Combination Sets, and $6 for making the two plates, if the teeth are not anatomically articulated.

It will require anywhere from 30 minutes to 30 days to adjust the teeth and either make them satisfactory or "make them do," according to how well the work has been done and what teeth have been used. Perhaps one hour would be a fair average for adjustments at the time of inserting and later adjustments. This hour is worth $2.50 to the dentist.

The total cost to the dentist, will then vary from $13.38 to $15.

What Can Be Given the Patient for These Fees

Well fitting, strong, durable dentures. The principle of soldering in the pins, now so well established in Twentieth Century Teeth, is more scientific than the principle of baking in the pins, and fifteen years' experience has proven its superiority in actual practice. More millions of soldered-in-pin teeth have been used, and are used to-day, than of any other one make of teeth.

The anterior moulds in Twentieth Century Teeth were considered the finest to be had until Trubyte moulds were produced. The shades are heartily approved by thousands of dentists, and the quality of the porcelain is not excelled.

The Twentieth Century Anatomical Moulds so completely revolutionized the forms of porcelain teeth, that the sale of the non-anatomical forms has been almost entirely eliminated.

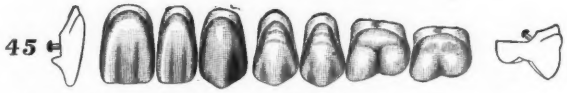
(*Continued on next page*)

Twentieth Century Moulds
for
Masculine Medium Square Faces

Length upper central 10 mm. Width 6 anteriors, set up, 45 mm. Width full 14, set up, 106 mm.

Length of upper central 11 mm. Width 6 anteriors, set up, 46 mm. Width full 14, set up, 107 mm.

Length upper central 10⅔. Width 6 anteriors, set up, 45 mm. Width full 14, set up, 106 mm.



Length upper central 12 mm. Width 6 anteriors, set up, 49 mm. Width full 14, set up, 114 mm.

Length of upper centrals 11 mm. Width 6 anteriors, set up, 46 mm. Width full 14, set up, 111 mm.

Length of upper centrals 11 mm. Width 6 anteriors, set up, 48 mm. Width full 14, set up, 113 mm.

(Continued on next page)

Twentieth Century Moulds
for
Feminine Medium Square Faces

4

Length upper central 10 mm. Width 6 anteriors, set up, 43 mm.
Width full 14, set up, 102 mm.

16

Length upper centrals 10 mm. Width 6 anteriors, set up, 42 mm.
Width full 14, set up, 103 mm.

7

Length upper central 10⅓ mm. Width 6 anteriors, set up, 45 mm.
Width full 14, set up 106 mm.

23

Length upper central 10 mm. Width 6 anteriors, set up, 45 mm.
Width full 14, set up, 106 mm.

47

Length upper centrals 10½ mm. Width 6 anteriors, set up, 47 mm.
Width full 14, set up, 108 mm.

(Continued on next page)

The Matter of Salesmanship

As a general thing, well-to-do Americans prefer to purchase the best in every line, thinking it more satisfactory in possession and the more economical in the end. For such persons Trubyte Teeth should be used.

There are thousands of people who are financially unable to purchase fine artificial dentures, but who need strong, durable, good looking sets of artificial teeth at low prices. For such patients, Twentieth Century Teeth will give satisfaction.

In some communities the fees for artificial dentures are very low. Some people in such communities can be convinced of the superiority and benefit of Trubyte service. But many, who are financially able, are mentally too poor to value such service. In such cases Twentieth Century Teeth are indicated.

The Matter of Articulation

The comfort and efficiency of the dentures will depend, in great part, upon the manner of setting-up. If they are *articulated*, they will be easier to learn to wear, will be more comfortable and efficient, and will cost the dentist far less in adjustments after insertion than if they are merely *occluded*.

Twentieth Century Anatomical Moulds, can be articulated with comparative ease, and are far more comfortable and efficient in use than any other vulcanite teeth except Trubyte Teeth.

Twentieth Century Teeth

Plain Vulcanite Pin Teeth, 1 x 14.....$1.40
Combination Sets, Pinless Posteriors, 1 x 14..1.00

THE DENTISTS' SUPPLY COMPANY

220 West 42nd Street **New York, N. Y.**

123-11-15

If You're a Millionaire

A SAVING OF $15.68
MAY NOT INTEREST YOU

If You're Not
You'll Jump at the Chance to Make It

The Fellowship Plastic Case

Not only offers this saving but the terms will suit you. Write for particulars

Send me full particulars about the big saving and liberal terms on the FELLOWSHIP PLASTIC OUTFIT.

NAME.....

ADDRESS.....

DEALER'S NAME.....

STRATFORD-COOKSON COMPANY

Successor to

E. de TREY & SONS

28 So. 40th Street, Philadelphia, Pa.

AMES' BERYLITE

is the
TIME SAVING
ENDURING
ADHESIVE
TRANSLUCENT
CEMENT

The formula originated in our own laboratory. We are in position to manufacture without embarrassment from European complications.

The W. V-B. AMES COMPANY
FREMONT, OHIO

The Pelton & Crane Company

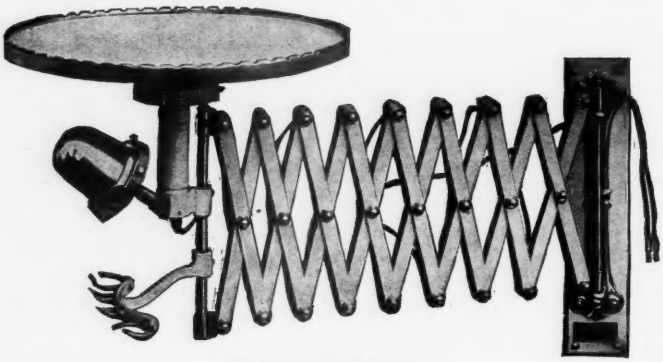
NUMBER "SEVEN"

Illuminated Bracket Table

A Practical, Substantial and attractive Bracket and Table—Absolutely Sanitary—Hundreds of Them Are Serving Successful Practitioners Daily.

The Working Surface—14 inches in diameter—is Heated and Lighted by an Electric Bulb directly under it.

Can Be Had in Various Finishes and For All Voltages.



Extends 10 to 60 inches

Patented

THE PELTON & CRANE COMPANY

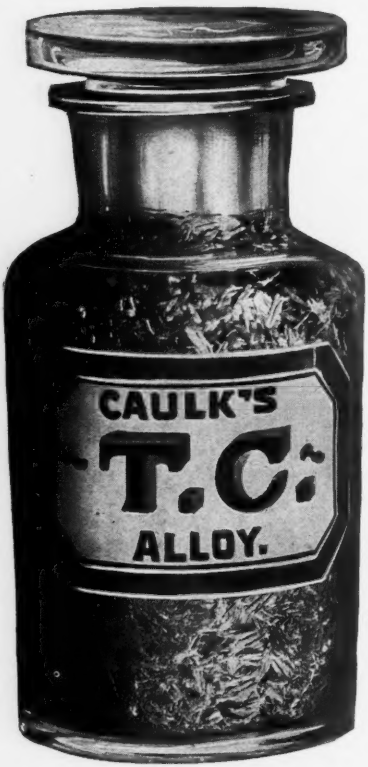
Harper Ave.
and
Hastings St.

Detroit
Mich.
U. S. A.

Just ask for "T. C."

Figure the cost per filling and only the best alloy will appeal to you

SOME DENTISTS SAY that they can't afford to buy a high-grade alloy and take a lot of pains in inserting an amalgam filling, because their patients refuse to pay a reasonable fee for such work.



There are thousands of dentists whose fees for amalgam fillings range from 50 cents to $1.50. The patient expects to get the service cheap — and does. Thus the patient determines the fee, and, indirectly determines the nature of the operation.

OTHER DENTISTS SAY *that they buy the best alloy possible*, take all the pains necessary in preparing the cavity, in manipulating and finishing, and charge the fee to which they think they are entitled.

They are not satisfied with plastering up a cavity; their amalgam fillings *do not leak, do not flatten out under the pressure of mastication, and the cusps are built up and carved to restore anatomical integrity. These are the dentists who use*

Twentieth Century Alloy

They have the satisfaction of doing the best work, and their fees are adequate. This 5 oz. bottle, $10.00.

THE L. D. CAULK COMPANY

Laboratories: Milford; Delaware

Esthetic dentistry required Synthetic Porcelain

Recently we received a letter, which with the elimination of some irrelevant clauses, reads as follows:

The L. D. Caulk Co.

Gentlemen:-

There are six dentists in this town and I am the youngest. I am the only one using a silicate, -- SYNTHETIC, of course.

They have not yet waked up, which suits me. Many of their patients are coming to me for Synthetic fillings, and I am happy to oblige them.

What I want is all the latest information regarding Synthetic to increase my efficiency.

Some say that my success in this town is remarkable for so young a man. Well, you know the secret, -- SYNTHETIC.

Sincerely,

J--B--F--

The L. D. Caulk Company
Laboratories, Milford, Delaware

FOR VULCANIZERS, AUTOMATIC PLUGGERS, LABORATORY APPLIANCES FOR CROWN AND BRIDGE WORK, LATHES AND AN ENDLESS VARIETY OF OTHER SPECIALTIES, ALL ROADS LEAD TO

BUFFALO

In Automatic Pluggers there's but one recognized standard, and that's the "Lewis," built upon principles which have stood the test of time for nearly fifty years.

The Lewis Mechanism produces an effective blow of suitable quality and force, and a stroke variable in length according to requirements. Wear is reduced to the minimum by the peculiar construction of the actuating mechanism. Correct methods of manufacture and thorough inspection of every part entering into the construction of Lewis Pluggers, together with beauty of design and finish, emphasize the standard set for building Buffalo Specialties — QUALITY UNSURPASSED.

All Lewis Pluggers have black hard rubber grips and they sell for Seven Dollars, any style.

Catalog "E" gives particulars and illustrations. Want a copy?

Buffalo Dental Manufacturing Co.
Buffalo, N. Y., U. S. A.

A Common Condition—
An Uncommon Remedy

Actual Size, $2.00 per bottle

A large majority of mature persons have Pyorrhea Alveolaris, and the difficulties of treating it successfully are well known to the Dental Profession.

Strictly on the basis of the results they themselves have obtained, many thousands of American Dental Practitioners have acknowledged the efficacy of Forhan's Pyorrhea Preparation and Forhan's Pyorrhea Astringent, both as a preventive and a remedy.

Satisfy yourself that we do not overstate the facts.

Forhan's Pyorrhea Preparation (paste) may be prescribed through druggists, but the liquid-Forhan's Pyorrhea Astringent is on sale through dental supply houses solely, and is sold ONLY TO DENTISTS—not to the public.

NO SAMPLES

Actual Size 50c per tube

FORHAN COMPANY

25 Elm Street **New York**

KOLYNOS

After Dr. Leo Rettger, Assistant Professor of Bacteriology and Hygiene, Sheffield Scientific School, of Yale University, had shown the long-time Amebicidal Properties of Kolynos in low dilutions, we requested him to determine the short-time disinfectant action of Kolynos—that is within one minute—upon unencysted and encysted Amebae.

We quote below from his last report under date of October 16th, 1915.

"The destructive action of Kolynos Dental Cream and of Liquid Kolynos is somewhat more pronounced towards the unencysted than the encysted Amebae in the concentration herein recorded."

"Complete destruction of unencysted Amebae by Kolynos Cream in one minute was brought about in concentrations of 7½ to 12% of the agent."

"Liquid Kolynos was effective in one minute exposure in the strength of 4%.

"Encysted Amebae were destroyed in a 12% concentration of Kolynos Cream and in 4% Liquid Kolynos."

Samples Mailed Upon Request

THE KOLYNOS COMPANY

NEW HAVEN, CONN.

Another Introductory Offer to Promote Painless Dentistry

Scharmann's Painless Burs and Scheuer's Pulp Protector

SCHARMANN'S burs are not absolutely painless. Not quite. But they are nearer painless than any cheap burs can be. "Why?" Because a sharp tool cuts faster, cleaner, and causes much less pain than a dull tool. Scharmann's burs are made of better steel, are better cut, and of better temper. They are sharper when new and stay sharp longer than a cheap bur. A cheap bur is dulled the first time it is used and becomes an instrument of torture to the patient. A Scharmann bur outlasts several cheap burs and is more economical in the long run. AND WE CAN PROVE IT.

Here's a Special Trial Offer. Good Only for 30 Days

Send One Dollar, Currency or Money Order, direct to us, and we will send you one dozen Scharmann's Single Cut Burs, the almost painless kind, and one box Dr. Scheuer's Pulp Protector, the best in the market today. Retail price of the two, $2.00. You cannot duplicate the order.

Gustav Scharmann 1183 Broadway, New York

Patients Always Appreciate Cleanliness

Hygienic Head Rest Pads instead of napkins are a great advance toward *positive* cleanliness, and will give your patients confidence in the absolute neatness of your office.

Try Them

Order a package. Not only are the pads strictly sanitary, but they are ideal head rests, soft and yielding to the head.

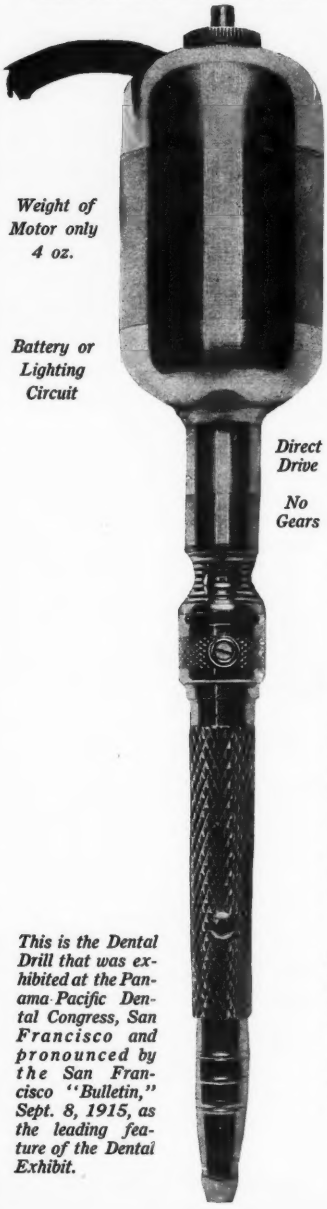
We recommend the No. 2 pad. It can be attached to any sectional chair head rest.

Price, per package, containing 2 pairs, $1.00

Send us $1.00 in currency and we will send you the package. Your dealer should have them. Ask him.

Gustav Scharmann
1183 Broadway New York

SAFETY FIRST
PERFECT INSULATION
Smallest Power Motor in the World



Weight of Motor only 4 oz.

Battery or Lighting Circuit

Direct Drive

No Gears

This is the Dental Drill that was exhibited at the Panama-Pacific Dental Congress, San Francisco and pronounced by the San Francisco "Bulletin," Sept. 8, 1915, as the leading feature of the Dental Exhibit.

Latest Electric Dental Drill

Result of Over 20 Years' Research and Experimenting

6-250 Volts. A. C. or D. C.

The cut shows actual size of a complete Dental Engine.

It is perfectly balanced and is powerful enough to drive ½ inch grind stone on first speed and larger diameter on the three higher speeds.

It is a direct drive. No gearing down devices to give power. One revolution of armature to one revolution of the drill. Power is obtained directly from the current.

Each motor will operate on either alternating or direct current.

It is regulated by the usual office foot controller giving four speeds 600–2800 R.P.M. forward and reverse.

It is also regulated by a small, very light portable controller that may be placed in a case along with the engine, instrument, medicine, etc., and taken to the patient's home or hospital and by removing a lamp from a socket you can regulate the motor to give the same four speeds forward and reverse and to deliver the same power.

It is noiseless and stands for maximum efficiency.

The light telephone cord attached to the motor affords the operator absolute freedom of movement. The change of handpieces is accomplished by unscrewing one from the motor stem and screwing in the other, requiring about the same time as the slip joint. The motor takes any hand piece that has the same thread as No. 7. Only the Doriot Handpiece requires fitting in our factory. The No. 6.-No. 7. Contra Angle, Fellowship, Consolidated or Engine Mallet may be screwed into the motor and be ready for operating in a few seconds. Or new handpieces may be ordered with the engine.

It is built by the Westinghouse Company and the outfit is offered the profession after having been subjected to hard usage in actual practice in New York. It is guaranteed for one year against defect not caused by misuse, abuse or accident.

Send today for new free Catalogue and acquaint yourself with an Engine that will increase your earning capacity in your office and in call cases of emergency.

Miniature Electric Dental Engine
H. A. Whiteside
24 East 48th Street, New York City

Gilmore Adjustable Attachment

For Removable Bridge Work and Anchors for Partial Dentures

Patented


No. 1


No. 2


No. 3


No. 4


Removable Bridge and Upper Extension

The clasp is standardized, adjustable for tension and made to exactly engage a No. 14 gauge wire of clasp metal or iridio-Platinum.

The wire must be soldered firmly to abutment.

The most flexible system known. Full dentures being anchored to one or more roots.

Artificial substitutes retained by this method equal fixed bridge work in service, and being removable can be kept in a sanitary condition.

No. 1 and No. 2 Kerr Special Metal for Rubber Work only, each .50
No. 3 and No. 4 Kerr Special Gold, Rubber or Soldering, each $1.00

Ask for circular B-2

Detroit Dental Manufacturing Company
Detroit, Michigan **U. S. A.**

A Dentist's Time Represents a Considerable Amount of Money

Every dentist whether he is busy during all of his office hours or not is necessarily wasting time by doing dental work with tools that are slow and crude.

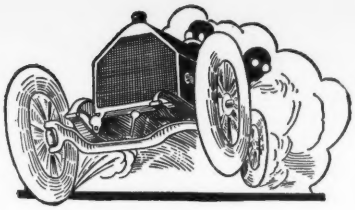
The "Little Giant" Post Puller

is the most efficient little instrument for extracting broken off crown pins or posts. It does the work in *less than 3 minutes* and not only saves unnecessary labor and time on the dentist's part, but does away with pain to the patient or the possibility of splitting the root.

The price of only $3.00 is another big feature that should not be overlooked. If you are not yet equipped with a "Little Giant" don't hesitate to get it at once. It is an investment that you will never regret. Your supply dealer has it.

When thinking of a "Little Giant" remember Kuroris, a most serviceable device for massaging the mucous membrane of the gums, cheeks and tongue. Your supply dealer has it.

F. H. SKINNER, 25 E. Washington Street, Chicago



Speed Up!

Don't let your work drag merely because you are not using the most efficient tools.

Lightning Disks and Strips

will enable you to work faster, easier, and with better results, than any other line of a similar nature that you have ever used.

They are made of insoluble materials, and are just as efficient, wet or dry. The grit cannot come off—our patented process locks it on.

Your dealer will tell you that hundreds of dentists consider them indispensable to their equipment.

Try them first, buy them afterward.

Samples on request.

A. P. de Sanno & Son

1252 N. Broad Street ***Philadelphia, Pa.***

IT STANDS ON ITS RECORD

REPUTATION IS SOMETHING THAT MONEY CANNOT BUY. It must be won. It is not acquired in an instant; time is an important factor. Like a building that is erected brick by brick, it must patiently be built up. Advertising may help, but only when the goods are better than the advertising. During the past ten years

Caulk's Crown & Bridge & Gold Inlay Cement

has been the reliance of many thousands of dentists for a wide variety of operations. They have used it to set crowns that have remained, bridges that didn't come loose, facings whose attachment was permanent, inlays that endure. Millions of fillings have been made with it that have stood the test of time.

While it has been building a reputation for itself, it has helped to build reputation for 60,000 of its users.

It Stands On Its Record

Sold by the principal supply houses all over the world, by independent dealers and by those who are endeavoring to sell their own cements in competition.

THE L. D. CAULK COMPANY
Laboratories: Milford, Delaware

$7.50 per Gross for Cutwell Burs

QUALITY UNEQUALLED

The Light Touch Does It!

(PATENT GRANTED DEC. 22, 1914)

No. 1 Assortment, in Revolving Turret Case, $7.50

Cutwell Burs are made from steel especially prepared for the purpose, the result of exhaustive experiments and tests. It possesses toughness, density, fine grain and machining qualities not found in any other. It is not a carbon steel, but a special alloy that yields very remarkable results both in machining and tempering.

Cutwell Burs are very straight and true-running. Special *Cutwell* Bur steel has much greater strength than any carbon steel; takes much finer temper without sacrificing toughness. Toughness, plus hardness, insures strength and dependability. We start with steel of remarkable quality, handle it correctly, temper it by our own process, and produce the *Cutwell* Bur.

Cutwell Burs are sold on a positive guaranty to do and to be all that we claim for them. If you are not thoroughly satisfied—get your money back.

STYLES AND PRICES

Nos. ½ to 7	Per dozen $0.75	Nos. 8 to 11	Per dozen $1.25
Nos. 11½ to 18	Per half gross... 4.00	Nos. 55½ to 62	Per half gross... 7.00
Nos. 33½ to 40	Per gross..... 7.50	Nos. 502 to 507	Per gross..... 13.00
	In 5-gross lots, gross, 7.00	Nos. 557 to 562	In 5-gross lots, gross, 12.50

ASSORTMENTS—IN REVOLVING TURRET METAL CASES (patented)

Assortment No. 1. (12-dozen Burs at $0.75 per dozen)..... $7.50
Assortment No. 2. (9½-dozen at $0.75; 2½-dozen at $1.25)..... 8.50

From Your Dealer—if you insist—or Direct from the Proud Maker

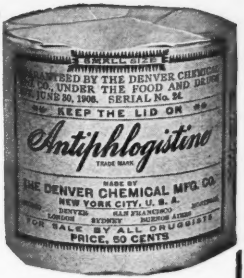
The Ransom & Randolph Co.
CLEVELAND TOLEDO GRAND RAPIDS
COLUMBUS

A Severe Test—

Controlling Inflammatory Corrosion of Hydrofluoric Acid by applying

Antiphlogistine
TRADE MARK

"In desperation" says a Chicago Dentist (of such a case) "I put on a liberal dressing of Antiphlogistine—relief almost instantaneous—part healed without disfiguration."



Directions: — Always heat the original container by placing in hot water. Needless exposure to the air impairs its osmotic properties—on which its therapeutic action largely depends.

"There's only ONE Antiphlogistine"

MAIN OFFICE AND LABORATORIES

THE DENVER CHEMICAL MFG. CO., NEW YORK, U. S. A.

Branches: LONDON, SYDNEY, BERLIN, PARIS, BUENOS AIRES, BARCELONA, MONTREAL

Something Every Dentist Is Looking For

A place where he can send his precious metals: scrap, filings, sweepings, pumice, etc., and be assured of correct valuation. The sender gets our check at once, and the lot is kept intact, awaiting acceptance of bid. Returned at our expense if unsatisfactory. No dentist can argue that this security is not worth at least a trial. A record of square dealing since 1879 should be a guarantee of the same square deal to you. Niagara brand solder, seamless shells or plate gold sent in lieu of cash, if desired.

A. ROBINSON & SON, *Assayers and Refiners,* **3 Catharine St., New York**

PATENTS

Caveats, Trade-Marks, Design-Patents, Copyrights, etc.

Correspondence Solicited

JOHN A. SAUL
Fendall Building, Washington, D. C.

SAL HEPATICA
Materially
AIDS
Local Treatment
In
PYORRHEA
Bristol-Myers Co.
New York

Ask your Salesman to show you this Assortment Box of Carborundum goods

The "How" and "Why" of Carborundum

CARBORUNDUM, as a raw material is the trade name of one of the hardest abrasives made, it varies in color but is uniform in quality.

Carborundum, as a finished product is quite another thing. There are marked differences in the service-giving qualities of Carborundum tools and they are due entirely to the methods followed in manufacture. The nature of the binder used and the moulding and firing processes have a most important bearing on the result.

The material binding the grains of Carborundum together must be of just the proper strength; not too soft, for then it will allow the grains to break away before they have done their full amount of work and the result will be unnecessary waste. On the other hand, it must not be too strong, for then it will not break away when it should in order to expose a fresh cutting surface, and as a result the grains will become dull, do no cutting and eventually burn the work.

In S. S. White Carborundum goods the binder is right, when the grains wear down to the proper point they break with a clean, clear fracture and always present a fresh even cutting surface. This spells efficiency.

Great care is also taken in the moulding to see that the material is of equal density throughout, thus eliminating soft spots and resulting in finished tools that wear down uniformly. This insures durability.

The points are correctly mounted, and the holes of the disks and wheels accurately centered. All are carefully inspected before leaving the factory, and known to be free from defects of any description.

S. S. White Carborundum goods, because of their great service and durability, are most economical.

It's the way Carborundum goods are made that counts

We have issued a booklet on Carborundum Disks and Wheels illustrating the various sizes. We will gladly mail a copy free upon request.

Carborundum Disks and Wheels	**per dozen**	**$0.90**
CARBORUNDUM POINTS		
Not mounted, Nos. 1 to 31	" "	**.50**
Mounted for our Chuck and Angle Handpieces, Nos. 1 to 12, 14 to 31	" "	**1.50**
Mounted for No. 6 H. P., Nos. 1 to 12, 14 to 31	" "	**1.75**

NOTE: No. 13 point sold unmounted only.

Important: Always specify style of handpiece or angle when ordering mounted points.

For Sale by Leading Dental Dealers and at Our Houses

THE S. S. WHITE DENTAL MANUFACTURING COMPANY

PHILADELPHIA

NEW YORK **ATLANTA** **BOSTON** **CINCINNATI** **CHICAGO** **BROOKLYN** **SAN FRANCISCO**

GLYCO-THYMOLINE

IS INDICATED WHEREVER THE ORAL SECRETIONS ARE FOUND TO BE ACID

In Pyorrhea, Alveolar Abscess, Spongy Gums, Chronic Ulceration, Abscessed Antrum, and all Abnormal conditions of the mouth the **Alkaline Antiseptic** treatment cannot be too strongly advocated.

KRESS & OWEN COMPANY

361-363 PEARL STREET **NEW YORK CITY**

THE ALKALINE ANTISEPTIC

AMERICAN PLATINUM WORKS

225-231 N. J. R. R. Ave., Newark, N. J.

PLATINUM

Foil and Sheet, Specially Soft

WIRE SQUARE, TRIANGULAR, HALF ROUND AND ROUND
SPECIALLY HARD, MEDIUM AND SOFT

Extra Pure Platinum Wire for Electrical Furnaces

Platinum Ware of every Description

WE EXCHANGE, BUY AND REFINE PLATINUM AND PLATINUM GOLD SCRAPS; ALSO DENTISTS' SWEEPS

OFFICE BENCH

THERE seems to be considerable demand for a small bench that can be set beside the cabinet in the operating room.

The one that is shown on this page is 39¼ inches high overall, 13½ inches deep and 13½ inches wide overall. It has a white glass working surface and the slide that pulls out to one side gives quite a little additional surface without taking up any room. A filing block can be attached to it and one of the shallow drawers contains a pan for filings. Another is divided by grooved compartments which is for instruments or tools. One of the deep drawers has two metal pans for plaster. The balance are plain drawers.

A little bench of this sort beside your cabinet will save many steps to the laboratory and is a good looking piece of office furniture. It is finished as well as the regular dental cabinet.

PRICE

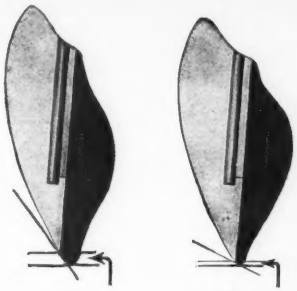
Mahogany, Quarter Oak, White or Gray Enamel $25.00

MANUFACTURED BY

THE AMERICAN CABINET CO,

Two Rivers, Wis. **Rahway, N. J.**

The Secret of Protection



Heavy Normal

The PROTECTION OF PIN FACINGS is controlled by no particular method, for they can fracture, do fracture, and will fracture at the most inopportune time.

All of the old methods of tip protection where the porcelain was bevelled have been denounced—even by the users of Pin Facings, as THE WRONG PRINCIPLE.

The Secret

PROTECTION THAT PROTECTS is EXTENSION TIP PROTECTION, a method created, developed and proved through the use of

Steele's Interchangeable Facings

Heavy, normal or light protection to the porcelains, as the case demands, is absolutely *under your control.*

Address us for the latest booklet *Steele's* illustrating and describing the technique of Extension Tip Protection.

The Columbus Dental Manufacturing Company
Columbus, Ohio

For Information and Prices in Europe and her Colonies, address our Agents
DE TREY & CO., Limited
12-13-14 Denman Street, Piccadilly Circus
London, W.

Seals Without Pressure

The pain which follows the application of arsenic is often caused by the pressure of the material which seals the treatment in the tooth.

When It Is Mixed Thin

Calxine flows into the cavity and sets quickly, without pressure upon the nearly or quite exposed pulp.

If you have never used Calxine, we shall be glad to send you a sample package.

From the Laboratories of

The Cleveland Dental Mfg. Co.
Cleveland, Ohio, U. S. A.

HALL'S

PRACTICAL ASSORTMENT

OF FIVE HUNDRED

HUB SEPARATING DISKS

The disks are packed in a convenient dispensing box, it is the result of our many years of manufacturing. The assortment is based on our actual sales of sizes and varieties and quantities of each. It is our belief that it is so graded that, with ordinary office practice, the entire box will become exhausted at the same time.

The assortment is as follows:

150	Double	Side	Flat	$\frac{7}{8}$	50	Safe	Side	$\frac{7}{8}$
100	"	"	"	$\frac{3}{4}$	50	"	"	$\frac{3}{4}$
50	"	"	"	$\frac{5}{8}$	50	"	"	$\frac{5}{8}$

50 Concave

By buying this combination box you save 20 per cent. over purchasing in separate lots, and always have at hand an assortment of the disks you use most, in a compartment box of convenient shape to place upon your operating table without taking up too much room.

Price per box of five hundred disks
Five Dollars.

WM. R. HALL & SON CO., 918 N. 17th St., Phila., Pa.

REPORTS **FROM** OUR

PACIFIC **COAST** AGENTS

LEAD US **TO** EXPECT MORE

ATLANTIC **COAST** ENTHUSIASM

relative to the closed mouth impression method as originated and demonstrated by SAM'L G. SUPPLEE.

It looks as though the old hit or miss plaster scheme would soon be a thing of the past. Big orders for Supplee compound heating outfits and impression trays are very tangible evidence.

Write for information to

SAM'L G. SUPPLEE & CO.
1 UNION SQ., NEW YORK

Wants, For Sale, Etc.

WANTED—Drug Stores (Snaps) for sale and positions in all states. Physicians, Veterinarians, Dentists, furnished for locations. F. V. Kniest, R. P., Omaha, Nebr. Estab. 1904.

WANTED—Dental Practices. Our method is time-tried and brings quick sales without publicity. Write for information. Unlocated dentists write for bargain sale lists. Mention States desired. The Dentists' Middleman, A. E. Hoag, D. D. S., Carrollton, Ill., Dr. C. N. Cryor, Western office, Old National Bank Building, Spokane, Wash.

WANTED—A man capable of managing a dental laboratory. Man must be an extra good plate worker, and be able to also do good crown and bridge work. Must be sober and have first-class reference. Address Noa Spears Co., San Antonio, Texas.

WANTED—Young man (colored) registered in Conn. Experienced in all branches of dentistry. Specialized in crown and bridge work, wants position. City or country. Part time or whole. Recommended. Address "S. C." care of THE DENTAL DIGEST, 220 West 42nd St., New York, N. Y.

WANTED—Cash for your used Burs. No recuts accepted. Will pay 40 cents per gross. Check will be sent same day burs received. Reference, City National Bank, W. Weatherhead, Goshen, Indiana.

WANTED—Young lady wants position as prophylactic nurse. Thoroughly understands office routine and management; also gold and porcelain inlay work. Nine years' experience. Not registered. Address "M. H." care of THE DENTAL DIGEST, 220 W. 42nd Street, New York, N. Y.

WANTED—Young lady desires position as nurse in dentist's office. Thoroughly experienced in a first class practice. Address "NURSE" care of THE DENTAL DIGEST, 220 West 42nd Street, New York, N. Y.

WANTED—Equal partner to start advertising office in Western Penna. city of 25,000; live, up-to-date city. None in town. Great opportunity. Address "P.," care of THE DENTAL DIGEST, 220 West 42nd Street, New York, N. Y.

DENTIST WANTED—In village of 3,500: none in the village. Nothing to sell. Office to rent. Inquire W. H. Steele, M. D., or Baldwin Times, Baldwin, New York.

WANTED—Competent operator to acquire well established family practice, New York town, on partnership, percentage or purchase plan. Give full particulars first letter. Address "Doctor" care of THE DENTAL DIGEST, 220 West 42nd Street, New York, N. Y.

WANTED—Wanted a permanent position for a good dentist. Address Couvrette & Colborn, Grand Forks, North Dakota.

TO RENT—An old established dentist located on Fifth Ave., near 42nd St., New York, desires to sub-let part of his office to a responsible ethical dentist, or take an associate. Splendid opportunity for specialist. Address "Fifth Ave." care of THE DENTAL DIGEST, 220 West 42nd Street, New York, N. Y.

FOR SALE—Practice and outfit, established ten years, price reasonable. Address 1213 N. 8th St., Philadelphia, Pa.

FOR SALE—Modern equipment with established practice. Oregon town of 2,500, near Portland. Ideal climate. Rich community. Address Box 868, Portland, Ore.

FOR SALE—Dental practice for sale, in San Juan, Island of Porto Rico. Practice $6,000 year, cash. Population 60,000. No competition to speak of. Object, to retire from practice altogether. All up-to-date fixtures. Address "Porto Rico" care of THE DENTAL DIGEST, 220 West 42nd Street, New York, N. Y.

FOR SALE—Teter Nitrous Oxide and Oxygen machine, latest model, excellent condition, Price $50.00. Address Dr. R. C. Fowler, Weston Bldg., Washington, D. C.

FOR SALE—Iowa Dental Practice for sale in fine town and country. Practice runs average of $300 month. $200 to $300 worth of work to turn over to successor. Price $850, and will take part cash. Large territory. Well established. Accredited high school. Population 1,100. Address or call on Dr. Irish, Buffalo Center, Iowa.

FOR SALE—Greenfield artificial roots. Onemedium sized saw, two artificial roots, two root facers, two drills and two gum cutters. All of the latest type and never been used. Address "E. C. S." care of THE DENTAL DIGEST, 220 West 42nd Street, New York.

You Are a Dentist

Line Them Up, Every Vulcanite Denture, With The Roscinian Metallic Linings, and

Get paid for your Professional as well as your Mechanical Knowledge. The Roscinian 24 K. Gold Lining at $3.50 per package (sufficient for 1 upper denture). The Roscinian Felt Aluminum Lining at $2.00 per box (sufficient for 4 upper dentures). The use of these Linings prevents heated and spongy gums and general unsanitary conditions of the oral tissues, and are gratefully appreciated by your patient. Directions are simple. No accessory tools to buy. No chance results. We do the experimenting.

Instruct Your Laboratories

For Sale at your dealer or address direct. Samples and Literature.

THE ROSCINIAN CO.

Metallurgists and Manufacturers of Metallic Linings

7703 WOODLAND AVENUE

CLEVELAND, O. U. S. A.

Will you give one family a MERRY XMAS DINNER?

We are but your agents—you are the host.

300,000 poor people cheered last Xmas in the U S by **The Salvation Army.**

Help us in this way to get close to these people. Give them at least one happy day in the year.

$2.00 Feeds a Family of Five

Send Donations to Commander Miss Booth
118 West Fourteenth Street, New York City
Western Dept., Commissioner Estill
108 N. Dearborn St., Chicago

Public Service Towels

Make Hygiene Apparent In Your Office

You will thereby strengthen the confidence of your patients and their friends in your skill and methods. They know as well as you do that even "individual" towels pass dozens of unclean and probably infected hands; in fact, are constantly exposed to contagion. Any paper towel is therefore preferable because less dangerous, cleaner and more wholesome. But the *ideal* towel should *never* be exposed before use, should be untouched by *any* hand; it should avoid waste in using and offer the healthy satisfaction of *rubbing* the skin besides drying it

Public Service Towels

RUB—DON'T BLOT

The only Towels REALLY sanitary, economical, practical.

SANITARY: *Individual Towels*, used once, destroyed and never used again.

ECONOMICAL: dispensed *one at a time* from a dust and germ-proof cabinet of enameled steel.

PRACTICAL: Used exactly as any cloth towel—*Rub* your skin dry and clean—don't blot.

Made of pure wood-pulp, unbleached, strong, absorbent.

Investigate how the equipment of your office will be improved with our towel-system that guarantees absolute hygiene. Ask us for samples and our valuable book—"Public Service."

NATIONAL PAPER PRODUCTS COMPANY

Factory No. 2 — 112 Canal St., Carthage, N.Y.
Factory No. 1 — Dept. M., San Francisco, Cal.

The

Halverson Electric Sterilizer

leads in practical improvements and superiority. Has an automatic lifting TRAY, two side HANDLES, reliable HEATING ELEMENT, automatic PROTECTING PLUG. safety FUSE SCREW, solid bronze rubber tipped LEGS, heavy copper BODY, and RED SIGNAL LIGHT on the bottom, a silent reminder the current is on.

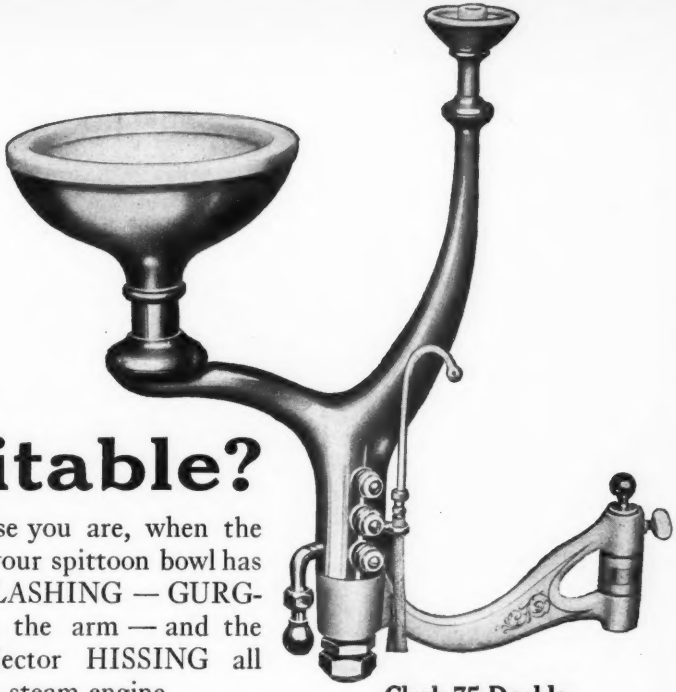
Ask Your Dealer or Write Us

THE HALVERSON CO.

Western Office and Factory
111 Sixth St., Portland, Ore.

Eastern Office
29 So. La Salle St., Chicago, Ill.

INDEX TO ADVERTISERS



Irritable?

Of course you are, when the water in your spittoon bowl has been SPLASHING — GURGLING in the arm — and the Saliva Ejector HISSING all day, like a steam engine.

Clark-75-Double
(*Indestructible*)

Your Spittoon Governs Your Disposition

What a GREAT RELIEF that new Clark-75-Double is with its MUFFLED SALIVA EJECTOR, its GURGLE SILENCER and its smooth, quiet running REVOLVING INNER BOWL. It's as SILENT AS THE SETTING SUN.

OUR OTHER MODELS also, have one or more of these features. Our new Catalog illustrates them.

Clip the Coupon

A. C. Clark & Co.
Grand Crossing
CHICAGO

A. C. CLARK & CO., Grand Crossing, Chicago, Ill.
Send me your New Colored Catalog and Exchange Proposition.
Dr.
My Dealer is

THE EVANS

A few of the advantages afforded are:

The saving of gold used on a bridge.

Easy manipulation.

Long tooth requires no more gold than a short one.

Great time saver.

No prepared backing required.

The saving of gold is said to be sufficient in most cases to pay for the tooth.

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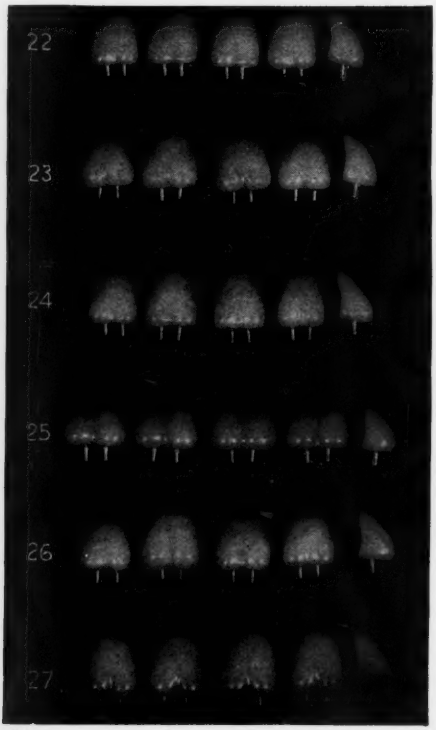


BRIDGE TEETH

We have recently commenced the manufacture of this special form of bicuspid and molar teeth and will hereafter supply them with our regular pointed platinum pins.

The pins are located at the masticating end of the tooth. Illustration contrasts the Evans tooth with one of the ordinary style, and shows the great saving of gold afforded by the Evans tooth without impairment of strength.

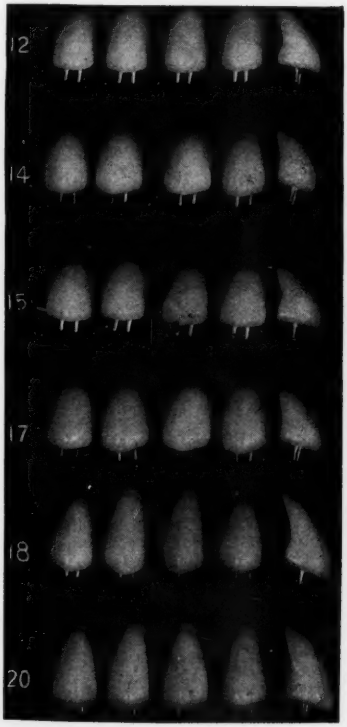
Evans Bridge Teeth may be ordered of your dealer or direct from us, specifying mould numbers from the illustrations herewith. Note illustrations show blunt pins, but the pins are now *pointed.*

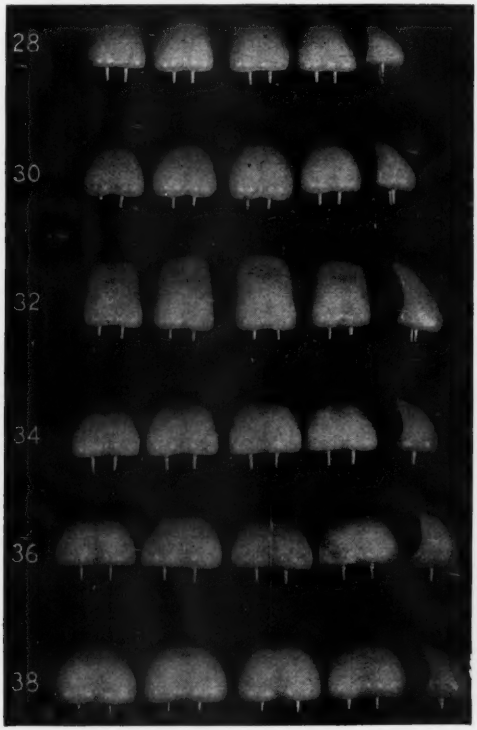
Price, each 30 cents

Subject to our usual quantity and cash discounts.

THE DENTISTS' SUPPLY COMPANY

220 West 42nd Street, New York, N. Y., U. S. A.





Ney's Golds Like "Voices of the Elms"

Beautiful Norfolk, Connecticut, has a shady Common, enriched by grand old elms, restful to tired people. These stately trees have been growing *long enough* to have told their own story. But they did not, and their significance was not apparent to many passersby. It only *became so* after signs were attached to them, showing that they are Ulmus Americanus, American Elm, Habitat Eastern North America, which is where our plant, the First American Gold Refinery is in operation. Under this botanical description is a board on which the following poetry appears:

"Cæsar saw fifty, we an hundred years (Ney's have seen 104)
Still green, a hundred more
We'll stand like seers
And watch the generations as they go
Beneath our branches in their hurried flow."

And some dentists have been *caught* in the "hurried flow," otherwise they would *take time* to *investigate* the *quality* and the *accuracy* in karats, of dental golds and solders whose use is *jeopardizing* their professional reputation and *undermining* their patients' confidence. Whether they will assent to this truth or not is *immaterial.* The truth will remain unshaken and the verdict of *coming days* will justify it.

Strictly speaking, it should *not* be necessary for our concern to advertise. For many years we have spent a liberal portion of the *moderate margin* of profit derived from sales, *not to advertise ourselves,* but to let the whole *universal* dental fraternity know *where* to procure the World's *Best* Dental Golds and Solders! Considering our 104 years of *uninterrupted service in behalf of dentists,* would you not suppose that our business must advance *unadvertised,* merely by force of its momentum?

To-day's advertising should be paid for—as *we* paid for *ours*—by concerns established only a *few years,* or just starting. But too well do we know the truth understood in the business world, that the *best* articles, about whose merits there is not a suggestion of *doubt,* must be placed properly before the public to procure recognition and endorsement! *That* is why, Doctor, we *again* commend to you *Ney's Products,* and if you are not using them, suggest the importance of *an immediate trial.* Good dealers are ready to supply *Ney's.* Are *you* ready?

Send us your Old Gold, Old Silver, Old Platinum, etc. to be exchanged for their equivalent in Ney's Golds or Solders.

THE J. M. NEY COMPANY

FOUNDED IN 1812.

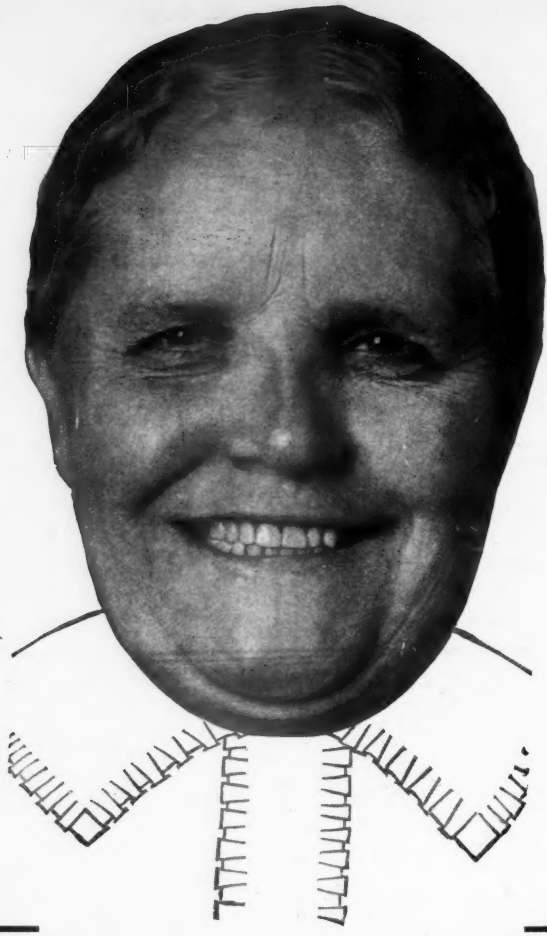
President

HARTFORD, CONN., U.S.A.

Retail Salesroom, 100 Boylston Street, Boston, Mass.

Represented by dealers in principal cities.

THE COUNTRY LIFE PRESS, GARDEN CITY, NEW YORK



Trubyte Teeth

are so lifelike in form and color that they facilitate the making of dentures which may pass for natural.

A number of such dentures are illustrated and described in this issue beginning with page 3 of the advertising section.

To dentists who desire to render professional denture service, these illustrations will afford interesting and valuable suggestions.

1241-12-15